917. Ross (A. J.) & Parisot (T. J.). **Record of the fungus Ichthyosporidium Caullery & Mesnil, 1905, in Idaho.**—*J. Parasit.*, **44**, 4, pp. 453–454, fig., 1958. [*Biol. Abstr.*, **33**, No. 2381, 1959.]

*Ichthyosporidium* is reported from liver and kidney lesions in the rainbow trout (*Salmo gairdnerii*) by the U.S. Fish & Wild life Service, Seattle, Washington.

918. Rigdon (R. H.), Ferguson (T. M.), Feldman (G. L.), Wheeler (H. O.), & Crouch (J. R.). **A study of the mechanism of the experimentally induced pendulous crop in the Turkey.**

Manfre (A. S.), Wheeler (H. O.), Feldman (G. L.), Rigdon (R. H.), Ferguson (T. M.), & Crouch (J. R.). **Fungi in the crop of the Turkey.**—*Amer. J. vet. Res.*, **19**, 72, pp. 681–688, 7 fig.; pp. 689–695, 9 fig., 1958.

At the Depts of Poultry Science, Biochemistry, and Nutrition, Texas Agricultural Experiment Station, Galveston, pendulous crops were experimentally produced in young turkeys by feeding a ration containing 52·9% cerelose. *Saccharomyces tellustris*, a gas-producing fungus, grows rapidly *in vitro* in the presence of this carbohydrate. *Candida albicans* and *S. tellustris* were found to occur normally in the crop. Birds fed a ration containing adequate amounts of all vitamins, salt mixtures, soybean oil, and soybean protein with cerelose as a source of carbohydrate were found to have many more bacteria and fungi in the crop than birds fed the same ration with starch substituted for cerelose. Neither fungus fermented a 3% solution of cerelose or starch alone. Cerelose at this conc., but not starch, was, however, fermented in the presence of Difco purple base, suggesting that specific nutrients are essential for the growth and multiplication of these fungi.

919. Pepys (J.). **Immunological aspects of allergic disorders.**—*Nature, Lond.*, **183**, 4657, pp. 296–297, 1959.

At a symposium on immunological aspects of allergic disorders, held in London, Nov. 1958, under the auspices of the British Society for Immunology and the British Association of Allergists, J. Pepys, R. W. Riddell, K. M. Citron, Y. M. Clayton, & E. I. Short described investigations of allergic hypersensitivity to *Aspergillus fumigatus* in man. Allergic reactions comprise rhinitis, conjunctivitis, and asthma. Respiratory infections are associated with pulmonary eosinophilia. The fungus is found significantly more frequently in the sputum of asthmatics without pulmonary eosinophilia than in the sputum of patients with other respiratory disorders. In an investigation of hypersensitivity as the cause of pulmonary eosinophilia skin-prick tests with extracts of *A. fumigatus*, *A. flavus*, *A. niger*, and *A. terreus* gave positive reactions to almost all spp. in nearly every hypersensitive subject. Culture medium filtrates, 1 month old, were the most potent allergens, followed by cell sap from fresh mycelium. Prick tests produced immediate weal reactions, followed after 3–12 hr. in a number of cases by a 'late' reaction, occasionally quite extensive, and differing from the delayed tuberculin type of reaction both macroscopically and in its more rapid appearance and resolution. Histological findings and the demonstration of precipitating antibodies in the serum of patients by conc. extracts suggest that this 'late' reaction is of the Arthus type. Bronchial reactions to inhalation tests with *Aspergillus* extracts were most evident in patients with eosinophilia; but proof that the fungus plays a part in the clinical picture must rest not only on evidence of its presence in the sputum, but also on immunological confirmation.

J. Longbottom, B. Hayward, and R. Augustin reported studies of the immunochemistry of *Cladosporium*. Spore and mycelial extracts were of equal potency in skin tests, their active components being non-dialysable and associated with the protein-like material which did not move from the base line in paper chromatography. At least 8 antigens were demonstrable in agar-gel tests with rabbit antisera to *C. fulvum* and *C. herbarum*. Antiserum to *C. herbarum* gave precipitation lines with the antigens of *C. fulvum*, but not vice-versa. *Cladosporium* antigens have the mobilities of serum albumins and $\alpha$- and $\beta$-globulins. Of 4 antigens demonstrated by immuno-electrophoresis in *C. fulvum*, 3 proved non-allergic in man.

920. Naranjo (P.). **Etiological agents of respiratory allergy in tropical countries of Central and South America.**—*J. Allergy*, **29**, 4, pp. 362–374, 2 tables, 1 fig., 1958.

A report from the Allergy Division, Universidad Central del Ecuador, Quito, of mould counts made by exposing plates and slides. The results are compared with those from Cali and with those made by other workers in C. and S. America.

921. Frankland (A. W.) & Hamilton (E[lizabeth] D.). **Allergic pulmonary aspergillosis.**—*Allergie u. Asthma*, **4**, 4–5, pp. 202–207, 2 fig., 1958. [German summary. 17 ref.]

A case-history from St. Mary's Hospital, London, of a 47-yr.-old asthmatic woman sensitive to *Aspergillus fumigatus*. Evidence is presented suggesting that this fungus, when inhaled into the lung of a person sensitive to it, will produce (1) asthma; (2) high blood and sputum eosinophilia; and (3) transient lung shadows on X-ray.

922. Frank (R. C.). **Farmer's lung—a form of pneumoconiosis due to organic dusts.** —*Amer. J. Roentgenol.*, **79**, 2, pp. 189–215, 17 fig., 1958. [94 ref.]

This important report from 4 hospitals in Wisconsin comprises, *inter alia*, a review of 27 cases of farmer's lung [**3**, No. 623], in which 2 fundamental reactions are believed to be involved. The 1st is a pulmonary response to the inhalation of organic dusts causing the development of granulomata with associated interstitial fibrosis: it is presumably followed by sensitization, accompanied by progressive pulmonary fibrosis on repeated exposures. The dusts commonly concerned are those of hay, grain, or silage, the heavy fungal spore content of which is regarded as largely responsible for the disease. The pulmonary reaction, however, is attributed to the inhalation of foreign material rather than to that of the spores as such, and the disease is not considered of mycotic origin. Sputum cultures occasionally yielded *Candida albicans*, and *Endomyces* sp. was harboured by 1 patient.

923. Anderson (A. A.). **New sampler for the collection, sizing, and the enumeration of viable airborne particles.**—*J. Bact.*, **76**, 5, pp. 471–484, 6 fig., 1 graph, 1958.

This sampler, developed at the U.S. Army Chemical Corps Proving Ground, Dugway, Utah, consists essentially of an upright air-tight cylinder with a conical opening at the top. Within it are 6 stages, each constructed to take a Petri dish. A vacuum pump attached by tubing to the base maintains a constant air flow (standard rate 1 cu. ft./min.), and to enter each successive stage the air must pass through a plate, having 400 perforations, located immediately above the Petri dish. As the size of the perforations decreases with the successive stages, so the jet velocity, and with it the tendency for spores to be trapped on the agar surface, increases. Thus, the larger spores are deposited first. On the 1st 2 plates colonies are scattered and are counted in the usual way, in plates 3–6 the plate counting is by the 'positive hole' method (for which there is a conversion table relating number of positive holes to particle counts) or microscopically. At the standard

flow the particles trapped range from $< 1 -> 10\,\mu$; only those $< 5\,\mu$ penetrate the lungs.

924. Quinlan (J. J.) & Hiltz (J. E.). **Farmer's lung or bronchomycosis fenisecarum.**—*Canad. med. Ass. J.*, **80**, 4, pp. 261–263, 1959. [French summary.]

Clinical observations are presented on 5 cases at the Nova Scotia Sanatorium, Kentville. The disease is of some importance in areas such as the Annapolis Valley, where there are many farmers raising cattle and occupied with ensilage and sometimes mouldy hay or grain-threshing. It is attributed primarily to infection by fungus spores occurring in wet hay or grain and on top of matured ensilage. Species of *Aspergillus*, *Mucor*, *Pullularia*, *Penicillium*, and *Spicaria*, and Actinomycetes have been identified from local material of this kind.

925. Cueva (J.), Tellez (G.), Ortiz (L.), & Castillo (Yolanda). **Los hongos atmosféricos de la ciudad de México.** [Fungi of the atmosphere in Mexico City.]—*Rev. méd. Hosp. Gen.* (*Mex.*), **21**, 7, pp. 511–521, 1958.

Petri dishes of Sabouraud glucose agar were exposed to the air and incubated at 22° C. The moulds most frequently isolated were *Monilia* [*Neurospora*] *sitophila* and *Penicillium*, *Cladosporium*, and *Cephalosporium* spp.; they were most abundant during autumn.

926. Zinchenko (A. V.). Заболевание Свиней, вызванное токсическими грибами. [Disease in Pigs caused by toxic fungi.]—*Veterinariya, Moscow*, **36**, 3, p. 37, 1959.

At the Mirotsko State farm, Kiev, Ukr.S.S.R., 700 pigs developed symptoms including fever, distension of the stomach, and in some cases fits. Examination at the Mycological Section of the Ukrainian Microbiological Institute revealed *Aspergillus flavus* and *Scopulariopsis brevicaulis* both in the stomach contents and in samples of food (in bone meal and fish meal, respectively). Natural recovery was accelerated by 3 daily oral doses of disulphane (1·5 g.) together with osarsol (0·3 g.).

927. a. Donin (L.) & Rovere (R. J.). **Las fitotoxicosis en patología comparada. I. Las micotoxicosis provocadas por los cereales parasitados.** [The toxicity of plants for animals. I. The toxicity of the fungi from parasitized cereals.]—*Sem. méd.* (*B. Aires*), **113**, 18, pp. 302–316, 1958.

A review of the literature on poisoning due to fungi parasitizing or growing on cereals and forage.

b. **II. La fusariotoxicosis provocada por cereales parasitados.** [Poisoning by cereals parasitized by *Fusarium*.]—*Ibid.*, **113**, 21, pp. 933–945, 1958.

A report of the finding of *F. moniliforme* [*Gibberella fujikuroi*] and *F. graminearum* [*G. zeae*] in maize seeds in Argentina and a review of the toxic effects of parasitized cereals.

928. Bonner (R. du B.). **The fungus flora of cattle feeds : taxonomical, cultural and ecological aspects.**—*Diss. Abstr.*, **19**, 1, p. 28, 1958.

At Pennsylvania State University, from samples of cattle feeds suspected to be sources of toxins, allergenic substances, or pathological agents, 65 spp. of fungi were isolated; more than a third had histories of disease involvement in livestock. Four growth types occurred in 10 species studied: *Fusarium moniliforme* [*Gibberella fujikuroi*], *Mucor janssenii*, and *M. racemosus*, which developed rapidly in favourable conditions; *Aspergillus fumigatus*, *Monascus purpureus*, and *Penicillium purpurogenum*, which developed over a wide range of conditions and

produced moderate amounts of mycelium and spores; *Alternaria tenuis*, *Chlamydomyces palmarum*, and *Cladosporium elatum*, which gave thick mycelial colonies in favourable, and thin growths in adverse, conditions; and *Oospora lactis* [*Geotrichum candidum*], which was highly restricted None of the fungi tested grew at 50° C., and only 3 spp. developed at R.H. 65%.

929. Ainsworth (G. C.) & Austwick (P. K. C.). **Fungal diseases of Animals.**—*Rev. Ser. Comm. Bur. anim. Hlth.* 6, 148 pp., 12 pl. (4 col.), 1 fig., 1959. 20*s*. [More than 650 ref.]

According to the authors, 'This review is . . . an attempt to survey all aspects of the literature of fungal infections of higher animals as conveniently as possible for anyone having an interest in these infections whether as veterinarian, mycologist or medical man.' Each of the 17 chapters deals with a specific disease or group of diseases under a series of standard headings: symptomatology, pathology, serology, epidemiology, treatment, etc. There is a detailed subject index.

930. **Report on the Animal Health Services in Great Britain, 1957.**—121 pp., 4 graphs, 1 map. London, H.M.S.O. 6*s*.

The number of routine diagnoses of mycoses at the Central Veterinary Laboratory, Weybridge, continues to increase. Nearly 90% of the 720 specimens received in 1957 were fresh tissues requiring direct examination and isolation. The level of mycotic abortion in cattle during the year was 6·1% of all aborted foetuses examined [cf. **3**, No. 153].

931. Drouhet (E.). **La mycologie médicale au VIe Congrès International de Médecine Tropicale et du Paludisme. Lisbonne, 5–13 Septembre 1958.** [Medical mycology at the Sixth International Congresses on Tropical Medicine and Malaria, Lisbon, 5–13 Sept. 1958.]—*Presse Med.*, **67**, 9, pp. 345–346, 1959.

Three sessions, dealing with clinical and epidemiological aspects of mycoses, ecology and saprophytic occurrence of pathogenic fungi, and biochemistry and physiology of pathogenic fungi, respectively, were devoted to medical mycology. At the 1st C. da Silva Lacaz reviewed the systemic mycoses of S. America [**3**, No. 933], R. Vanbreuseghem [cf. **3**, No. 1061] and E. Drouhet [cf. **3**, No. 115] dealt with African histoplasmosis (*Histoplasma duboisii*), A. S. Leite with ringworm of African children, and P. Abbott [cf. **2**, No. 1910] with general aspects, and P. Destombes [cf. **3**, No. 849], with osseous forms of mycetoma. The 2nd session was introduced by C. W. Emmons, who reviewed the ecology of pathogenic fungi, and he was followed by H. I. Lurie on histoplasmosis in S. Africa [cf. **3**, No. 2455], R. O. Egeberg, A. Elconin, & M. M. Chahoon on the life of *Coccidioides immitis* in Californian soil (incidence being highest 3–4 weeks after the end of the rainy season), Miss E. B. Durie on dermatophytes in Australian soil [**3**, No. 315], G. C. Ainsworth on the human mouth as a reservoir of pathogenic fungi [cf. **3**, No. 762], and N. van Uden on the intestinal flora of man and farm animals [cf. **3**, No. 452, 896]. Papers at the 3rd session included a review by G. Segretain of the biochemistry and physiology of pathogenic fungi, P. Miguens on the physiology of *Trichophyton quinckeanum*, H. Seeliger, C. da Silva Lacaz & C. M. Ulson on the serological identification of fungi [cf. **3**, No. 310] with special reference to *Pullularia* spp. [cf. **3**, 936], M. Mariat on the actinomycetes causing mycetoma, and A. Castellani on mycological methods for determining carbon compounds.

In addition more than 20 'free communications' (of which 16 titles are listed and some annotated) were given under the auspices of the International Society for Human and Animal Mycology. Most of the topics dealt with have been noticed in this *Review*.

[Other notes on these meetings are J. C. Gentles, *Nature, Lond.*, **182**, 4650, pp.

1648–1649, 1958; Anon., *Deutsch. med. Wschr.*, **83**, 49, p. 2190, 1958; G. A. de Vries, *Ned. Tijds. Geneesk.*, **103**, 11, pp. 583–584, 1959; and Anon., *Bull. internat. Soc. hum. anim. Mycol.* 4, pp. 10–18, 1959.]

932. Kashkin (P. N.). **Review of works on medical mycology published in the U.S.S.R. between 1946–1956.**—*Mycopathologia*, **10**, 3, pp. 227–268, 1959.

This useful synopsis contains reference to numerous papers which have not come to the notice of this *Review*. There are 5 sections, viz. 'Dermatomycoses and dermatophytes' (separate bibliography of 212 ref.); 'Epidermomycoses' (38 ref.); 'Moniliases (candidoses) and yeast mycoses' (78 ref.); 'Actinomycoses, chromomycosis and other mycoses' (58 ref.); and 'Monographs and guides', this last section comprising brief reviews of 20 books on, or related to, aspects of medical and veterinary mycology.

[The titles of all the books and papers referred to have been translated into English.]

933. Lacaz (C. da S.). **Aspectos clinicos e epidemiologicos das micoses profundas na America do Sul.** [Clinical and epidemiological aspects of deep-seated mycoses in South America.]—*Mycopathologia*, **10**, 4, pp. 355–378, 1959. [English summary. 93 ref.]

Notes on the systemic mycoses of S. America [cf. **3**, No. 931], viz. S. American blastomycosis (*Paracoccidioides brasiliensis*), keloid blastomycosis (*P. loboi*), N. American blastomycosis (*Blastomyces dermatitidis*), cryptococcosis [*Cryptococcus neoformans*] chromoblastomycosis, histoplasmosis (*Histoplasma capsulatum*), coccidioidomycosis (*Coccidioides immitis*), rhinosporidiosis (*Rhinosporidium seeberi*), sporotrichosis (*Sporotrichum schenckii*), actinomycosis, and maduromycosis.

934. Das Gupta (S. N.) & Shome (S. K.). **Studies in medical mycology. I. On the occurrence of mycotic diseases in Lucknow.**—*Mycopathologia*, **10**, 3, pp. 177–186, 1959.

This paper is based on a survey of material from 405 outpatients at the Skin Dept, King George Medical College, Lucknow, India, 316 of whom presented dermatomycoses, 38 tinea [pityriasis] versicolor (*Malassezia* [*furfur*]), 30 moniliasis (*Candida albicans*), and 21 erythrasma (*Microsporon* [*Nocardia minutissima*]). Five dermatophytes were identified, viz. *Trichophyton rubrum* (50% of the infections,) *T. mentagrophytes* (26%), *T. tonsurans* (5%), *T. verrucosum* (8%) (a new record for India), and *Epidermophyton floccosum* (3%).

935. Rieth (H.). **A diagnostic diagram of mycoses and mycetes.**—*Mycopathologia*, **10**, 3, pp. 223–226, 1 col. chart, 1959.

Another version of work already noticed [**3**, No. 627].

936. Ulson (Cecilia M.). **Contribuição para o estudo das chamadas 'leveduras pretas'.** [Contribution to the study of the so-called 'black yeasts'.]—167 pp., 12 fig., São Paulo, Departamento de Publicações, Universidade de São Paulo, 1959. [English summary (pp. 155–160). 67 ref.]

The monograph is divided into 6 chapters, devoted to generalities, habitat, and current views on the systematics of the black yeasts; a synopsis of morphology and biology; materials and methods; results; commentary; and summary and conclusions. A table of morphological identifications is provided, giving comparisons with serological typing by H. Seeliger.

The author examined 33 cultures, the chief macro- and microscopic characteristics in solid and liquid media being described. The opt. temp. (22° for most isolates) and O tolerance were determined. Observations were also made on the biochemical

activity and the *in vitro* response to fungicidin (mycostatin) was tested. These data made it possible to classify the cultures, the majority of which were found to belong to *Pullularia*. The importance of the appearance of the culture and morphological characteristics was demonstrated and the existence of unstable vars. of *P. pullulans* shown. The uniformity of the zymogram of the 23 samples of *P. pullulans* is discussed, and sensitivity to fungicidin action, especially in *P. pullulans*, is noted. *Dematium* and *Torula* are placed under *Pullularia*, but *Hormiscium* is maintained as distinct. *Phialophora* is taken to include *P. gougerotii*, *P. jeanselmei*, and *P. werneckii*. The last should not be placed in *Pullularia*, despite the possible existence of common group antigens between it and *P. pullulans*.

937. Mottet (E.). **Les mycoses pulmonaires, maladies d'avenir?** [Pulmonary mycoses, diseases of the future?]—*Rev. méd. Louvain, 1959*, 1, pp. 3–12, 1959.

A discussion under the general headings of frequency and diagnosis, supplemented by a table indicating the principal sites affected by, and the treatments recommended for, actinomycosis (*Actinomyces israelii*), nocardiosis (*Nocardia asteroides* and other *N.* spp.), aspergillosis (*Aspergillus fumigatus* and *A. niger*), moniliasis (*Candida* spp. [including *C. albicans*]), geotrichosis (*Geotrichum* spp.), cryptococcosis [*Cryptococcus neoformans*], and histoplasmosis [*Histoplasma capsulatum*].

938. Sands (J. H.), Schulz (D. M.), & Aromstam (E. M.). **The indeterminate pulmonary infiltration—our diagnostic dilemma. Report of twenty-three cases of chronic granulomatous disease of the lung.**—*Arch. intern. Med.*, **103**, 1, pp. 23–27, 1959.

Particularly important among the results of this inquiry at Valley Forge Army Hospital, Phoenixville, Pennsylvania, was the lack of a characteristic roentgenographic picture to distinguish the fungal from other diseases. The 23 cases comprised 11 of histoplasmosis [*Histoplasma capsulatum*], 5 granulomata of unknown origin, 2 each blastomycosis (*Blastomyces dermatitidis*), coccidioidomycosis (*Coccidioides immitis*), and cryptococcosis (*Cryptococcus neoformans*), and 1 of infection by an unidentified mycelium-forming fungus. Among the diagnostic adjuncts in current use the most valuable is stated to be pulmonary biopsy, but like skin tests, serological data, and cultural and other methods it has limitations.

939. Kramer (C. L.) & Mix (A. J.). **Deep freeze storage of fungus cultures.**—*Trans. Kansas Acad. Sci.*, **60**, 1, pp. 58–64, 1957.

At the University of Kansas, Laurence, of 451 isolates of fungi stored in a General Electric locker deep freeze at —18° C. and examined for viability at yearly intervals, 331 (representing 228 ssp.) survived the whole period; 65 (56 spp.) survived 4 yr., and 55 (49 spp.) survived less than 1 yr. Among the fungi surviving 4–5 yr. were the following pathogens: *Allescheria boydii*, *Aspergillus fumigatus*, *Blastomyces dermatitidis*, *Candida albicans*, *Cryptococcus neoformans*, *Epidermophyton floccosum*, *Nocardia asteroides*, and *Hormodendrum* [*Phialophora*], *Microsporum*, *Trichophyton*, and *Trichosporon* spp.

940. De Vries (G. A.). **Verzameling, behandeling en opzending van klinisch-pathologisch materiaal voor onderzoek op schimmels en actinomyceten.** [Collection, handling and dispatch of clinical-pathological material intended for investigation for fungi and actinomycetes.]—*Ned. Tijdschr. Geneesk.*, **101**, 51, pp. 2443–2444, 1957.

General instructions for the handling and dispatch of clinical specimens.

941. Carlson (J. R.) & Snyder (Jean W.). **Candida albicans plate assay of nystatin.**—*Antibiotic. & Chemother.*, **9**, 3, pp. 139–144, 1959.

The routine assay of nystatin at the Biological Control Laboratories, Upjohn

Company, Kalamazoo, Michigan, is described, using *C. albicans* and employing a 5% malt extract, 5% pancreatic casein digest, and 20% dextrose agar. Opt. conditions for the assay are determined in terms of pH of medium, incubation time and temp., inoculum, and nature of the nystatin diluent employed. High reproducibility is claimed for the method.

942. Larsh (H. W.), Hinton (Agnes), & Silberg (S. L.). **The use of the tissue culture method in evaluating antifungal agents against systemic fungi.**—*Antibiot. Ann., 1957–8*, pp. 988–991, 1958.

Further studies at the Communicable Disease Center, Kansas City [cf. **3**, 330], using *Histoplasma capsulatum*, *Blastomyces dermatitidis*, *Sporotrichum schenckii*, *Cryptococcus neoformans*, *Candida albicans*, and *B.* [*Paracoccidioides*] *brasiliensis*, suggested that no single antifungal agent tested was universally active against all spp. of systemic fungi, and that combination of 2 agents may result in additive activity against most of the fungi. Amphotericin B was the most efficient agent studied; the activity of some analogues of amebicide was greater than that of the parent compound.

943. Louria (D. B.), Feder (N.), Mitchell (W.), & Emmons (C. W.). **Influence of fungus strain and lapse of time in experimental histoplasmosis and of volume of inoculum in cryptococcosis upon recovery of the fungi.**—*J. Lab. clin. Med.*, **53**, 2, pp. 311–317, 1959.

The best recovery of *Histoplasma capsulatum* in experiments at the National Institute of Allergy and Infectious Diseases, Bethesda, Maryland, was obtained with 1 old laboratory strain and 2 more recent isolates when the mice were sacrificed 2 weeks after inoculation. An increase in the interval up to 8–14 weeks decreased the proportion of positive cultures in these strains [cf. **2**, No. 1845] but not in 2 others recently isolated. No comparable decline with time was observed in experimental infections with *Cryptococcus neoformans* but the culture of a large vol. of spinal fluid appeared to be an important factor in the isolation of the fungus. It is suggested that at least 20 ml. of blood, urine, or exudate or 5 ml. spinal fluid should be used in cases of suspected infection.

944. English (A. R.) & McBride (T. J.). **PA 150, PA 153, and PA 166 : new polyene antifungal antibiotics.**—*Antibiot. Ann., 1957–8*, pp. 893–896, 1958.

It is reported from the Bacteriology Laboratory, Pfizer Institute, Maywood, New Jersey, that the 3 antibiotics had excellent *in vitro* activity against a wide variety of pathogenic fungi. In addition to its excellent activity against *Candida* spp., PA 150 was inhibitory to some pathogenic fungi at a min. conc. of 10 μg./ml. or less. Orally at 14 mg./kg. or subcutaneously at 2·25 mg./kg. it was markedly toxic to mice. PA 166 was active against a wide variety of fungi [which are tabulated] in addition to its *in vitro* activity against strains of *C.* However, PA 166 failed to protect mice experimentally infected with *C. albicans*.

945. Struyk (A. P.), Drost (G.), Haisvisz (J. M.), van Eek (T.), & Hoogerheide (J. C.). **Pimaricin, a new antifungal antibiotic.**—*Antibiot. Ann., 1957–8*, pp. 878–885, 2 fig., 2 graphs, 1958.

Physical properties, activity, toxicity, and the effect on the circulatory system and faecal flora of pimaricin, a new crystalline antibiotic, produced by *Streptomyces natalensis* (a new sp. to be described elsewhere) are discussed. This substance, belonging to the polyene group of antibiotics, is highly active against a large variety of yeasts and fungi (including *Candida albicans*, *Histoplasma capsulatum*, and dermatophytes at 3–50 μg./ml.) but shows no activity against bacteria.

946. Manten (A.) & Hoogerheide (J. C.). **The influence of a new antifungal antibiotic, pimaricin, on the yeast flora of the gastrointestinal tract of Rats and Mice during tetracycline administration.**—*Antibiot. & Chemother.*, **8**, 8, pp. 381–386, 1958. [Spanish summary, p. 433.]

The normal yeast flora of the intestinal tract of rats and mice, as shown in this paper from the Antibiotic Dept, Netherlands National Institute of Public Health, Utrecht, was greatly increased within 24 hr. of feeding tetracycline (200 p.p.m.), as determined by yeast counts in faeces. The addition of pimaricin (50 p.p.m.) prevented this accumulation, or reduced the count almost to zero, if already established. The reduction of the yeast count persisted for an appreciable time after stopping the pimaricin, even with continued tetracycline feeding.

947. Kaplan (M. A.), Heinemann (B.), Mydlinski (Irene), Buckwalter (J. L.), & Hooper (I. R.). **An antifungal antibiotic (AYF) produced by a strain of Streptomyces aureofaciens.**—*Antibiot. & Chemother.*, **8**, 8, pp. 491–495, 1958.

This new antifungal agent, prepared in the Research Division, Bristol Labs., Inc., Syracuse, New York, is shown to be a heptaene or a mixture of 2 closely related compounds. Absorption spectra, elementary analyses and solubility data are given. The agent is shown to inhibit the growth of a number of pathogenic fungi, being particularly effective against *Candida albicans* and *Trichophyton schoenleinii*. A dose of 0·038 mg./kg. given intraperitoneally was effective against *C. albicans* infection in mice, but it was ineffective when given intramuscularly or orally.

948. Utz (J. P.), Louria (D. B.), Feder (N.), Emmons (C. W.), & McCullough (N. B.). **A report of clinical studies on the use of amphotericin in patients with systemic fungal diseases.**—*Antibiot. Ann., 1957–8*, pp. 65–70, 1958.

It is reported that of 4 patients with histoplasmosis (*Histoplasma capsulatum*), 6 with cryptococcosis [*Cryptococcus neoformans*], 2 with blastomycosis (*Blastomyces dermatitidis*), and 2 with coccidioidomycosis [*Coccidioides immitis*] who received a variety of preparations of amphotericin orally (max. dosage for adults: 0·55–0·88 mg./kg. daily), improvement was recorded in 3 cases of cryptococcal meningitis, 1 of cryptococcosis of soft tissues and bones, while death occurred after an apparent improvement in 1 patient with disseminated histoplasmosis. Intravenous administration to 8 patients produced an apparent recovery of 1 case of disseminated histoplasmosis, and was beneficial to 2 patients with blastomycosis. The drug only produced a mild and a reversible azotemia in some cases.

949. Schäfer (E.) & Schönfeld (K.). **Experimentelle Untersuchungen zur Frage bakteriostatischer und fungistatischer Eigenschaften des Cerumens.** [Experimental studies on the question of bacteriostatic and fungistatic properties of cerumen.]—*Arch. Ohr.-, Nas.-, u. KehlkHeilk.*, **172**, pp. 419–426, 1958.

At the Hygiene Institut, Heidelberg University, Germany, cerumen samples from 102 patients were examined for fungistatic activity by placing them at the centre of malt agar plates on which the fungi were inoculated at various distances. *Mucor* sp. was in no way inhibited. *Aspergillus niger* and *Penicillium glaucum* were somewhat inhibited. Only in the case of *Trichophyton gypseum* [*T. mentagrophytes*] [cf. **3**, No. 364] was there clearly a slowing up of growth.

950. Karpovich (E. A.), Kostenich (N. A.), & Viktorskit (A. P.). Влияние фтивазида, гептил-резорцина и гексил-резорцина на культуры дерматофитов. [The effect of phtivaside, heptil-resorcin, and hexil-resorcin on dermatophytic cultures.]—Сб. науч. Работ. белорус. н.-и. кожно-венерол. Ин-т.

[*Sborn. nauch. rabot. Beloruss. N.I. kozhno-venerol. Inst.*], **5**, pp. 322–323, 1957. [Abs. in *Referat. Zh. Biol., 1959*, 6, p. 82, 1959.]

Tests showed that only hexil-resorcin possesses fungistatic and fungicidal activity against *Trichophyton* [unspecified] and *Achorion* [*T.*] *schoenleinii*.

951. Schneierson (S. S.), Amsterdam (D.), & Littman (M. L.). **Inactivation of amphotericin B, chlorquinaldol, gentian violet and nystatin by bile salts.**—*Proc. Soc. exp. Biol. Med.*, **99**, pp. 241–244, 1 graph, 1958.

At the Dept of Microbiology, Mount Sinai Hospital, New York, the above-mentioned antimycotics were inactivated to a considerable degree by 1% bile salts. No altered susceptibility in the test organism (*Candida albicans*) could be demonstrated and the mechanism of inactivation remains to be determined.

952. Harvey (J. C.), Cantrell (J. R.), & Fisher (A. M.). **Actinomycosis : its recognition and treatment.**—*Ann. intern. Med.*, **46**, pp. 868–884, 1957.

This is a detailed report from the Depts of Medicine and Surgery, Johns Hopkins University Hospital, Baltimore, Maryland, on 37 patients seen during the last 25 yr., actinomycosis (*Actinomyces israelii*) having been confirmed by culture or biopsy. It was noted that abdominal lesions occurred in 68%, 24% appearing in the cervico-facial region.

Treatment was by combined massive doses of penicillin and by surgical excision. During the last 5 yr. the cure rate was 88%. The theory of the exogenous origin of the infection was supported.

953. Hülskamp (P.), Gradis (W.), & Sanchez-Pons (J. C.). **Actinomicosis del colon izquierdo.** [Actinomycosis of the descending colon.]—*Pren. med. argent.*, **45**, 37, pp. 3033–3034, 1958.

A tumoral growth with extensive infiltration involving the renal fossa was attributed to *Actinomyces israelii*. A clinical cure was obtained after the following treatment: penicillin G administered intramuscularly, 2 million units/6 hr. for 75 days (total dose 600 million units); sulfadiazine, 4 g./day for 1 month (total dose 120 g.); iodoxy-quinoline sulphate (yatren) intravenously; 3 ml. of a 3% solution every other day up to a total of 4·5 g.; and deep X-ray therapy.

954. Montgomery (R. M.) & Weltow (W. A.). **Primary actinomycosis of the upper extremity.**—*Arch. Derm., Chicago*, **79**, 5, pp. 578–580, 1 fig., 1959.

This case from the Roosevelt Hospital, New York, of primary actinomycosis [*Actinomyces israelii*] of the right hand and forearm in a 42-yr.-old Negro is noteworthy because of the unique location. There was no history of injury or occupational contact.

955. Holm (P.) & Kwapinski (J. B.). **Studies on the detection of Actinomyces antibodies in human sera by using pure antigenic fractions of Actinomyces israeli.**—*Acta path. microbiol. scand.*, **45**, 1, pp. 107–112, 1959.

At Statens Seruminstitut, Copenhagen, the occurrence of antibodies reacting with polysaccharide and nucleoprotein fractions derived from *A. israelii* was investigated in 81 samples of human sera by the haemaglutination and complement-fixation tests. Positive results by both methods were obtained in 12 of 16 specimens from actinomycoses (mostly cervico-facial), in half the sera from cases of tuberculosis, and in a quarter of those from streptococcal infections. A quarter of the actinomycosis sera reacted with tuberculin-coated hen red cells, suggesting a serological relationship between antibodies existing in at least some of the sera from the 3 types of infection investigated.

956. Kuester (E.). **Introductory remarks and welcome.** Krassilnikov (N. A.). **Ueber die Klassifizierung der Aktinomyceten als Produzenten von Antibiotica.** [On the classification of Actinomycetes as the producers of antibiotics.] Wallhaeusser (K. H.). **Die Lochkartei als Hilfsmittel bei der Klassifizierung von Streptomyceten.** [Punched cards as an aid in the classification of streptomycetes.]. Waksman (S. A.). **Factors to be considered in the classification of actinomycetes.** Kutzner (H. J.). **Bericht über Untersuchungen zur Systematik der Streptomyceten.** [Report on systematic studies of streptomycetes.] Baldacci (E.). **Criteria for the improvement of the classification of actinomycetes.** Ciferri (R.). **Systematic vs. classificatory taxonomy and speciology of the Actinomycetales.** Tešić (Ž. P.). **Contribution to an essay on the more rational classification of actinomycetes.** Kuester (E.). **Outline of a comparative study of criteria used in characterization of the Actinomycetes.**—*Int. Bull. bact. Nom. Taxon.*, **9**, 2, pp. 57–61, 63–64, 65–71, 73–78, 79–80, 81–87, 89–91, 93–96, 97–104, 1959.

This is a continuation of the report on the Round Table Conference [cf. **3**, 807] on the taxonomy of *Streptomyces*. Attention may be drawn to Waksman's revision of his key to the fam. and gen. of the Actinomycetales.

957. Pridham (T. G.), Anderson (P.), Foley (C.), Lindenfelser (L. A.), Hesseltine (C. W.), & Benedict (R. G.). **A selection of media for maintenance and taxonomic study of streptomycetes.**—*Antib. Ann., 1956–7*, pp. 947–953, 1957.

Full directions are given, from the Northern Utilization Research Branch, Agricultural Research Service, Peoria, Illinois, for the preparation of media for culturing streptomycetes and opt. for study of sporophore morphology, spore colour (colour of mature sporulating aerial mycelium), colour of the reverse, and colour of soluble pigment, if produced [cf. **3**, No. 807]. The 10 best media were: tomato paste oatmeal agar, yeast extract agar, Hickey and Tresner's agar, tomato paste agar, Bennett's agar, potato dextrose agar, Carvajal's oatmeal agar, asparagine dextrose agar, inorganic salts–starch agar, and Czapek's solution agar.

958. Pridham (T. G.), Hesseltine (C. W.), & Benedict (R. G.). **A guide for the classification of streptomycetes according to selected groups.**—*Appl. Microbiol.*, **6**, 1, pp. 52–79, 8 fig., 1958.

This is a provisional guide to 7 sections, based on morphology of sporophores, and to 6 series, based on spore colour, listing component spp. and strains. Metabolic products or activity of the spp. are enumerated, and documented. The guide is preceded by a general discussion.

959. Sanford (J. P.), Hatten (Betty E.), & Fordtran (J. S.). **Effectiveness of novobiocin and cycloserine on Nocardia asteroides. Preliminary evaluation in vitro and vivo.**—*Antibiot. Ann., 1957–8*, pp. 22–26, 1958.

At the Dept of Internal Medicine, University of Texas Southwestern Medical School, Dallas, 5 of 18 strains of *N. asteroides* tested *in vitro* on tryptose phosphate agar were subsequently tested in 2 strains of mice. The results indicated that only cycloserine (at approx. 50 mg./kg.) reduced effectively the extent of nocardiosis in mice.

960. González Ochoa (A.) & Ahumada Padilla (M.). **Tratamiento del micetoma actinomicósico por la inyección local de diaminodifenilsulfona.** [Treatment of actinomycotic mycetoma by local injection with diaminodiphenylsulphone.] —*Rev. Inst. Salubr. Enf. trop.*, **18**, 1, pp. 41–44, 1958.

Four cases of Madura foot caused by *Nocardia brasiliensis* were successfully treated

by injecting 2 ml. (20% solution) of Avlo sulfon daily into the opened sinuses and abscesses. The authors affirm that the cure is more rapid by this method than by oral administration [**2**, No. 669].

961. Niño (F. L.). **Micetoma actinomicosico de rodilla.** [Actinomycotic mycetoma of the knee.]—*Pren. méd. argent.*, **45**, 33, pp. 2799–2802, 1958.

A case with lesions of the soft tissues of the knee attributed to *Actinomyces* (*Nocardia*) *brasiliensis* is reported from Buenos Aires.

962. Castellani (A.), De Brito (Maria M. X.), & Pinto (M. R.). **An actinomycete isolated from an autochthonous case of mycetoma in Portugal.**—*J. trop. Med. Hyg.*, **62**, 2, pp. 27–36, 9 fig. (1 col.), 1959.

From the Instituto de Medicina Tropical, Lisbon, the authors propose 'temporarily' a new genus *Actinomonospora* with the previously undescribed *A. lusitanica* as the type. Its diagnostic characteristics are: production of non-diffusible pigments, absence of aerial mycelium, reproduction chiefly by terminal conidia, invariably produced singly on undifferentiated, typically long (but also short or very short) branches. A combined generic and specific Latin diagnosis is given.

963. Kaden (R.). **Neue Untersuchungsergebnisse in der Pilzbiologie.** [New results of research into the biology of fungi.]—*Mykosen*, **1**, 1, pp. 1–38, 20 fig., 1957.

This is a general review of recent advances in medical mycology, with particular emphasis on the dermatophytes, their physiology, and the techniques used for identifying them.

964. Blank (F.). **On the isolation and classification of dermatophytes.**—*Akt. Probl. Derm.*, **1**, pp. 349–363, 1959. [54 ref.]

Following a short account of cultural practices employed in isolating dermatophytes, past and present classifications are reviewed, and the genera and spp. delimited in the widely accepted Emmons classification are discussed.

965. Grigoraki (L.). **Les bases d'un accord entre dermatologistes et mycologues sur une classification unique des dermatophytes.** [The bases of an agreement between dermatologists and mycologists on a single classification of the dermatophytes.]—*Mycopathologia*, **10**, 4, pp. 317–340, 1959.

The author recapitulates his classification of the dermatophytes, originally published in 1924 [cf. **2**, No. 2163, 2164], with the claim that, unlike other systems, it should be equally attractive to both mycologists and clinical workers.

966. Ito (K.) & Rieth (H.). **Medizinische Mykologie. I. Allgemeines zur Systematik der Dermatophyten.**—*Bull. pharm. Res. Inst., Osaka*, 16, pp. 19–35, 33 fig., 1958. [61 ref.]

Popular notes on the characteristics, in the parasitic and saprophytic states, which are used in the classification of the dermatophytes [cf. **3**, No. 819], together with a brief discussion of their place in the Fungi Imperfecti.

967. Grin (E. I.). **Upliv zemlje i njezine micropopulacije na patogene dermatofite u inficiranoj dlaci.** [The effect of soil and its micro-population on pathogenic dermatophytes in infected hair.]—*Rad. Naučk. Društ. Bosne-Hercegovine*, **12**, 6, pp. 5–22, 7 pl. (13 fig.,) 1959. [English summary. 26 ref.]

At the Section of Medical Science, Sarajevo, Yugoslavia, when human hair infected with *Trichophyton violaceum* was placed on moist soil samples, under laboratory and natural conditions, lysis of the fungus within the hair occurred, on average,

within 6–8 days. The process takes longer at low temp. It was observed that the hair retained its shape for a long time, while the fungal elements gradually lose theirs, breaking up into a homogeneous granular mass.

Tests to establish the cause of the lysis of the fungus in contact with soil consisted in isolating the micro-organisms [unspecified] from the infected hair which had been kept in the soil for some time, and in which the decomposition of the fungus has taken place. In another series of tests the micro-organisms were isolated on conventional culture media. Of the 8 isolated strains [undetermined] 5 had a lytic action.

From these results it is concluded that *T. violaceum* cannot survive saprophytically in the soil.

968. Griffin (D. M.). **Haïr as a substrate for non-keratinolytic fungi.**—*Nature, Lond.*, **183**, 4670, p. 1281, 1959.

In studies at the School of Agriculture, University of Sydney, Australia, of the fungal succession in hair decomposing in contact with soil, it has been found that hair, whether autoclaved or sterilized with propylene oxide, can support limited growth of many non-keratinolytic fungi, including spp. of *Mortierella, Cunninghamella, Chaetomium, Aspergillus, Gliocladium, Penicillium, Alternaria, Curvularia, Epicoccum, Helminthosporium, Phoma*, and *Pyrenochaeta*. The ease with which the fungi fructified on this substratum has led to its adoption for teaching work, and it has also proved useful in promoting either asexual reproduction in apparently sterile cultures, or the production of more easily characterized structures in cultures which, on normal media, have produced only an ill-defined mass of simple slime spores.

969. Georg (Lucille K.), Kaplan (W.), Ajello (L.), Williamson (W. M.), & Tilden (E. B.). **The parasitic nature of the soil fungus Keratinomyces ajelloi.**—*J. invest. Derm.*, **32**, 4, pp. 539–544, 14 fig., 1959.

At the Communicable Disease Center, Atlanta, Georgia, *K. ajelloi*, was isolated from ringworm lesions on a captive squirrel (*Ratufa indica malabarica*). Mycelium was present in both skin scrapings and hair filaments. Experimental infections were established in guinea-pigs. On the basis of these findings the fungus is considered to be a dermatophyte and a potential human parasite.

970. Dawson (Christine O.) & Gentles (J. C.). **Perfect stage of Keratinomyces ajelloi.**—*Nature, Lond.*, **183**, 4671, pp. 1345–1346, 1 fig., 1959.

When 14 soil samples from 8 districts of Glasgow were examined at the Dept of Bacteriology, University of Glasgow, by baiting with human and horse hair [**1**, No. 2544], shreds of cow horn, and feathers, *K. ajelloi*, usually with other keratinophilic fungi, was isolated from 13 of them. By the end of the 3rd week at 28° C. creamy yellow, globose cleistothecia had developed on some of the baits, and it was confirmed by culture of single ascospores that this was the perfect state of the fungus [which is not named]. The cleistothecia are 300–900 $\mu$ diam. and have a peridium of pale yellow hyphae with a characteristic pattern of claw-like branches entangled to form a close network. The individual cells are dumb-bell shaped with thick echinulate walls, and many bear long, smooth-walled, spiral appendages, or occasionally macroconidia of the typical *Keratinomyces* form. The numerous asci are subglobose, each containing 8 bright yellow spores with finely echinulate walls. Horse hair and child's hair favoured the production of the perfect state, which occurred rarely on adult hair, and then only after lengthy incubation (6–8 weeks). There was evidence that the fungus was heterothallic, and that compatible strains would reproduce sexually under certain conditions, fulfilled by certain keratinous baits on the surface of unsterilized soil.

971. Balabanoff (V. A.). **Beitrag zur Morphologie der Befruchtungsorgane des Ctenomyces mentagrophytes Bodin.** [On the morphology of the sexual organs of *C. mentagrophytes*.]—*Zbl. Bakt.*, **173**, pp. 602–608, 8 fig., 1958. [English, French, Spanish, and Russian summaries.]

A description is given from the Hautklinik der Medizinischen Fakultät, Sofia, Bulgaria, of a strain of *C.* [*Trichophyton*] *mentagrophytes* (*T. gypseum asteroides*) with the following colony characteristics: numerous rudimentary perithecia in the zone between the centre and edge; a zone, more pronounced than usual, of hyphae, spirals and macroconidia; centre more translucent and filled with rounded cells without visible supporting hyphae. A spiral emerges from one end of nearly every macroconidium, the lateral walls of which very often bear aleuriospores; sometimes the other end shows crosier formation. The morphological facts are discussed from the viewpoint of taxonomic relations between *Ctenomyces* and the Gypseum group.

972. Hejtmánek (M.). **Intensita keratinolytické aktivity přidních dermatofytů.** [Intensity of keratinolytic activity of soil dermatophytes.]—*Čes. Mykol.*, **13**, 2, pp. 103–108, 3 fig., 1959. [English summary.]

At the Faculty of Medicine, Palackého University, Olomonei, Czechoslovakia, *Keratinomyces ajelloi* and *Microsporum gypseum* were more active than *M. gypseum* var. *nanum* in the breakdown of rams' horn keratin (av. wt. deficiencies after 10 months 999·3, 220·7–478·5, and 177·1 mg., respectively), and the 2 first-mentioned are therefore thought to be the natural agents of breakdown of keratinous materials in the soil.

973. Kashkin (P. N.). Об антибактериальных свойствах дерматофитов. [On the antibacterial properties of dermatophytes.]—Воп. общ. Патол. [*Vop. obshch. Pathol.*], **19**, pp. 287–292, 1957.

At the Mycological Section, Leningrad Venerial Institute, antibiotic substances were isolated by chloroform and acetone extraction of solid media from 3–6-week-cultures of dermatophytes. Extracts of *Trichophyton gypseum* [*T. mentagrophytes*], *T. rubrum*, *T. rosaceum*, and *Microsporum lanosum* [*M. canis*] were the most active, and those from *T. acuminatum* [*T. sabouraudii*], *T. glabrum*, *Achorion* [*T.*] *schoenleinii*, *Epidermophyton inguinale* [*E. floccosum*] considerably less so.

974. Blank (H.), Sagami (S.), Boyd (Carolyn), & Roth (F. J.). **The pathogenesis of superficial fungous infections in cultured human skin.**—*Arch. Derm., Chicago*, **79**, 5, pp. 524–535, 11 fig., 1959. [30 ref.]

At the Division of Dermatology, University of Miami School of Medicine, cultures of newborn or adult human skin on various media based on Hank's solution were completely invaded within 48 hr., with penetration of both dermis and epidermis, when an inoculum pellet [cf. **2**, No. 1689] of *Trichophyton mentagrophytes* or *T. rubrum* from Sabouraud broth+0·5% yeast extract was placed at the centre of the skin. In the presence of serum the fungal growth was restricted to the stratum corneum [cf. Lőrincz *et al.*, **3**, No. 640]. *T. rubrum* was more invasive than *T. mentagrophytes*.

975. Keeney (E. L.) & Huppert (M.). **Immunization against superficial fungous infection. I. Studies on experimental animals.**

Huppert (M.) & Keeney (E. L.). **Idem. II. Studies on human volunteer subjects.**—*J. invest. Derm.*, **32**, 1, pp. 7–13, 15–19, 1959.

At the Scripps Clinic and Research Foundation, La Jolla, California, a vaccine prepared from broth cultures of a strain of *Trichophyton mentagrophytes*, using a procedure [fully described] which extracts the antigens in as nearly as possible

their native state, was incorporated into a salve base and rubbed onto the sides of guinea-pigs. After the immunization period the animals were challenged by standardized superficial infection with the homologous strain. All developed a hypersensitivity reaction, confirming the presence of antigenic material, and in comparison with controls exhibited a very marked resistance, lasting at least 30 days. Immunity was, however, not complete.

When human volunteers were treated with this preparation, a similar preparation from an *Alternaria* strain, or with the salve base alone, and then exposed to *T. mentagrophytes*, resistance was found to develop only in those treated with the homologous vaccine.

976. Polemann (G.). **Durch Mikrosporon gypseum verursachte Mikrosporien. Ein Beitrag zur Biologie des Erregers.** [Microsporoses caused by *Microsporum gypseum*. A contribution to the biology of the agent.]—*Dtsch. med. Wschr.*, **84**, 15, pp. 756–759, 4 fig., 2 graphs, 1959.

Information is presented on the classification and synonymy of *M. gypseum* in connexion with 3 cases, 1 involving the left eyelid of a 22-yr.-old female shop assistant and 2 in female laboratory technicians (arm and leg), seen at the Hautklinik, University of Cologne, which bring the total for Germany [cf. **2**, No. 1665] to 15. The incubation period was 4–5 days. The lesions healed rapidly under topical therapy with bradex-vioform ointment and iodine. Attempts to isolate the fungus from soil have so far been unsuccessful, but it was demonstrated that (*a*) its $O_2$ consumption is stimulated by various types of soil and (*b*) the organic and not the inorganic constituents are responsible for the process.

977. Alfonso-Armenteros (J.). **El Microsporum gypseum. Nota preliminar.** [*M. gypseum*. Preliminary note.]—*Bol. Soc. cubana Derm. Sif.*, **15**, 2, pp. 81–85, 1958.

Report of 2 cases of inflammatory tinea capitis and tinea corporis in Cuba due to *M. gypseum*, which has been isolated from the soil in Cuba [**2**, No. 2282].

978. Trespalacios (F.). **Nota sobre el Microsporum gypseum en Cuba.** [Note on *M. gypseum* in Cuba.]—*Bol. Soc. cubana Derm. Sif.*, **15**, 2, pp. 86–87, 1958.

*M. gypseum* was isolated from 4 cases of inflammatory tinea capitis, from 8 of tinea corporis, 3 of tinea cruris, and 1 of inflammatory tinea of the moustache [see above].

979. Catanei (A.) & Schousböe (A.). **Étude morphologique et expérimentale de deux souches algériennes d'Achorion schönleini ayant provoqué du favus généralisé et mortel.** [Morphological and experimental study of two Algerian strains of *A. schoenleini* which caused generalized and fatal favus.]—*Arch. Inst. Pasteur Algér.*, **36**, 2, pp. 153–158, 1958.

The colonies of the strains of *A.* [*Trichophyton*] *schoenleinii* under observation [cf. **3**, No. 504] sometimes assumed a rust- or apricot-coloured tinge. The delayed development of the favic characters in some of the cultures necessitated protracted observations. In the skin lesions of 1 case a fungus with the cultural features of *Microsporum canis* was temporarily associated with *T. schoenleinii*. Pathogenicity to guinea-pigs of these strains, which caused the death of children aged 9 and 10, was not enhanced.

980. Cremer (G.). **Onderzoek naar de verspreiding van voetmycosen te Amsterdam.** [Study on the spread of foot mycoses in Amsterdam.]—*Ned. Tijdschr. Geneesk.*, **103**, 9, pp. 448–452, 1959. [English summary.]

Of 101 students, 212 nurses, 268 labourers, and 313 children aged 2–14 examined, 28, 20, 31, and 0–8%, respectively, were infected, the incidence within the 1st

group having increased by 100% in just over 20 yr. *Trichophyton mentagrophytes* was isolated from 104 cases, *T. rubrum* from 30, and *Epidermophyton floccosum* from 3 [cf. **3**, No. 658].

981. Raubitschek (F.). **Infectivity and family incidence of black dot tinea capitis.** —*Arch. Derm., Chicago*, **79**, 4, pp. 477–479, 1959.

In a survey at the Dept of Dermatology, Hadassah University Hospital, Jerusalem, of the family incidence of tinea capitis trichophytica among the children of 942 members of 150 immigrant families from N. African [cf. **2**, No. 2209] and middle-eastern countries, the overall incidence was 46·6%. Where there was no adult carrier in the family, it was 42·6% (slightly higher in the boys), and in families where an adult or older child was a carrier it was 60·6%. Of 180 cultures, 95% were *Trichophyton violaceum*.

982. Esteves (J.) & Neves (H.). **Vorläufige Untersuchung der experimentellen Infektion durch 'Trichophyton violaceum' beim Menschen.** [Preliminary investigation of experimental *T. violaceum* infection in Man.]—*Hautarzt*, **10**, 4, pp. 151–154, 1959.

At the Curry Cabral Hospital, Lisbon, *T. violaceum* infection was established on 55 of 91 subjects who were inoculated, on the interscapular region of the back in most cases, by placing infected hairs on the surface of the skin and keeping them in place with leucoplast. All lesions cleared spontaneously in 11–79 days. In persons who had previously had dermatophyte infections the incubation period and the duration of infection were shorter, and the lesions smaller. The experimental infection did not alter the response to the trichophytin test.

983. Main (P. T.). **Ringworm contracted from Cattle: a two years' survey in general practice.**—*Practitioner*, **182**, 1089, pp. 347–354, 1959. [14 ref.]

*Trichophyton* [*verrucosum* var.] *discoides* was responsible for at least 18 and probably more of the 31 cases of infection, mostly of the arms and hands, diagnosed in a rural area of Sussex during 1954–56. All but 3 of the cases were connected with farms and 24 were males. In 10 of the patients infection is believed to have been acquired within the family circle. The clinical course was often protracted, the min., av., and max. periods of treatment being 12, 38, and 94 days, respectively. The milder types of lesion responded favourably to zinc undecenoate ointment but for the more advanced forms Castellani's paint was preferable.

984. Dolan (M. M.), Kligman (A. M.), Kobylinski (P. G.), & Motsavage (M. A.). **Ringworm epizootics in laboratory Mice and Rats: experimental and accidental transmission of infection.**—*J. invest. Derm.*, **30**, 1, pp. 23–25, 1 fig., 1958. [*V.B.*, **28**, No. 2081.]

At the University of Pennsylvania School of Medicine, Philadelphia, 3 laboratory workers contracted infection from natural infections of *Trichophyton mentagrophytes* in laboratory white mice (1–2% infection) and rats (20%). Cultures from the hair of apparently healthy rats and mice on arrival from the breeding farms showed 18% of the animals to harbour *T. mentagrophytes*. Experimental infections were obtained in both man and animals. Prophylactic procedures are suggested.

985. Blank (H.) & Roth (F. J.). **The treatment of dermatomycoses with orally administered griseofulvin.**—*Arch. Derm., Chicago*, **79**, 3, pp. 259–266, 14 fig., 1959.

This paper from the University of Miami School of Medicine, Jackson Memorial Hospital, Florida, is based on the results of griseofulvin therapy in 27 cases of dermatophyte infection, 1 of blastomycosis [*Blastomyces dermatitidis*], and 3 of

pityriasis versicolor (*Malassezia furfur*). All dermatophyte infections responded, but none of the others. A detailed table gives, among other things, the location of lesions, the causative fungus, duration of disease, dosage, duration of treatment, and time to clear. The results of *in vitro* studies are to be reported later, but it is stated that *Microsporum canis*, *M. gypseum*, *M. audouinii*, *Epidermophyton floccosum*, *Trichophyton tonsurans*, *T. mentagrophytes*, *T. megnini*, and *T. gallinae* were completely inhibited for 72 hr. by 0·2–0·4 μg./ml., while *Candida albicans*, *Cryptococcus neoformans* and *Sporotrichum schenckii* were insensitive to 30 μg./ml.

Toxic responses to therapeutic doses in man appear to be minimal, though 1 patient developed an urticaria-like drug eruption after 6 weeks of continuous therapy, and others had mild self-limited complaints of gastrointestinal distress and headache. Though the min. effective and opt. dosages for various types of infection remain to be determined, a daily dose of 1 g. seems adequate.

986. Martin (A. R.). **The systemic and local treatment of experimental dermatophytosis with griseofulvin.**—*J. invest. Derm.*, **32**, 4, pp. 525–528, 4 graphs, 1959.

At the Pharmaceuticals Division, Research Dept, Imperial Chemical Industries, Macclesfield, Cheshire [cf. **3**, 773, 841], shaved patches on the flanks of guinea pigs were inoculated by scarification with a spore suspension of *Trichophyton mentagrophytes*, and the progress of the lesions compared in untreated controls and in animals treated with griseofulvin orally (25–100 mg./kg.) or topically (1% in arachis oil). Oral treatment was strikingly effective, the degree of oedema in animals treated from day 1 (infection day) to day 8 at 25 mg./kg. being only about 10% of that in controls. The local treatment was also effective, but less so.

987. **Antifungal properties of griseofulvin.**—*Pharm. J.*, *1959*, pp. 279–280, 3 fig., 1959.

This is a popular but useful account of griseofulvin, with special reference to its use against tinea. The effective dosage for human subjects is stated to be 15–30 mg./kg. daily.

988. Mihay (B.) & Zackheim (H. S.). **The absence of a fungistatic effect of squalene on dermatophytes.**—*J. invest. Derm.*, **32**, 2 (1), pp. 73–74, 1959.

At the Dept of Dermatology, Wayne State University and Detroit Receiving Hospital, Detroit, Michigan, the unsaturated hydrocarbon squalene ($C_{30}H_{50}$), found in certain fish oils and in human sebum, showed no fungistatic activity against *Trichophyton mentagrophytes*, *T. sulphureum*, *Microsporium audouinii*, or *M. lanosum* [*M. canis*], either *in vitro* or by a semi-*in vivo* method [**3**, No. 208].

989. Vilanova (X.), Casanovas (M.), & Pujol (J.). **Resultados obtenidos en el tratamiento de las tinas tonsurantes con la sal sódica del ácido paraaminobenzoico y las esencias vegetales.** [Results of the treatment of tinea tonsurans with the sodium salt of *p*-aminobenzoic acid and with essential oils.]—*Act. dermosifiliogr.* (*Madr.*), **49**, 6, pp. 361–366, 1958.

The 22 cases treated were due to *Trichophyton tonsurans* (15), to *T. violaceum* (5), and to both species (2). In 6 cure was obtained with *p*-aminobenzoic acid and in 2 with essential oils [**1**, No. 1523]. The cured cases were *T. tonsurans*, 5; *T. violaceum*, 2; and mixed infection, 1. In the 2nd mixed infection *T. tonsurans* disappeared while *T. violaceum* persisted.

990. Cornbleet (T.), Barsky (S.), & Firestein (B.). **The use of polyvinylpyrrolidone iodine in eczematoid ringworm.**—*Arch. Derm., Chicago*, **77**, 3, pp. 335–336, 1958.

At the Dept of Dermatology, University of Illinois College of Medicine, Chicago, 50

cases of eczematoid ringworm [unspecified] were treated twice daily with applications of povicone (a preparation containing 10% aqueous polyvinylpyrrolidone (equivalent to 1% available iodine), approx. 0·5% NaI, 1% glycerin, and 0·25% of a wetting agent, the pH being adjusted to 4·5–5); 24 were greatly improved or clinically cured, 17 showed some to substantial improvement, and 9 very little or no improvement.

991. Tanaka (K.), Iwai (I.), Okajima (Y.), & Konotsune (T.). **Antifungal activity of some synthetic acetylenic compounds.**—*Antibiot. & Chemother.*, **9**, 3, pp. 151–155, 1959.

Compounds with high antifungal activity in an agar streak dilution test against *Trichophyton asteroides* [*T. mentagrophytes*] and *Piricularia oryzae* were found among a group of 20 acetylenic compounds tested at the Takamine Laboratory, Sankyo Co., Ltd., Tokyo. No activity was demonstrated against *Candida albicans* or bacteria.

992. Hejtmánek (M.) & Dadák (V.). **Die antibiotische Wirkung des Agropyrens auf die Hautpilze.** [The antibiotic effect of agropyrene on dermatophytes.]—*Naturwissenschaften*, **46**, 4, p. 152, 1959.

In this joint report from the Medizinische Fakultät, Palacký University, Olomouc, and the Naturwissenschaftliche Fakultät, University of Brno, Czechoslovakia, the powerful inhibitory action of agropyrene, a heavily saturated aromatic carbon isolated from the ethereal oil of *Agropyron repens* (*Chem. Ber.*, **80**, p. 97, 1947), on *Epidermophyton floccosum* and *Trichophyton gypseum* var. *asteroides* [*T. mentagrophytes*] was demonstrated in *in vitro* tests. *Keratinomyces ajelloi* and *Microsporum gypseum* were more resistant to its action.

993. Fernandez-Baquero (G.) & Trespalacios (F.). **Piedra. Primer caso observado en Cuba.** [Piedra. The first case recorded in Cuba.]—*Bol. Soc. cubana Derm. Sif.*, **15**, 2, p. 73, 1958.

Preliminary note on a case of white piedra attributed to *Trichosporon beigelii*.

994. Kaplan (W.). **Piedra in lower animals. A case report of white piedra in a Monkey and a review of the literature.**—*J. Amer. vet. med. Ass.*, **134**, 3, pp. 113–117, 7 fig., 1959.

During examination at the Communicable Disease Center, Atalanta, Georgia, of a black spider monkey (*Ateles* sp.), which died shortly afterwards from an unspecified systemic disease, there was found to be widespread loss and breakage of hair at the extremities, tail, and head. The affected hairs bore nodules up to twice the thickness of the normal hair, and the larger hairs had as many as 6 nodules. Destruction of the shaft was so complete that the nodules served as bridges joining adjacent patches of normal hair. *Trichophyton cutaneum* was isolated. There was no fluorescence under Wood's light. As this fungus occurs in a number of natural substrates it seems likely that both human and animal infections would be contracted from common sources in nature: it is unlikely that animal infection is important in the epidemiology of the human disease.

995. Mulcock (A. P.). **Discoloration of wool fibres by a fungus.**—*Nature, Lond.*, **183**, 4670, pp. 1281–1282, 1959.

The author reports from the Canterbury Agricultural College, University of New Zealand, Christchurch, that a *Peyronellaea* sp. (near *P. glomerata*) not previously recorded from wool was the cause of a black discoloration, resistant to normal scouring and common solvents, in a consignment of wool exported to Japan. The fibres were outwardly intact, but large hyphae were obvious within them, and cross

sections showed severe mechanical disruption of the cortical cells, which doubtless contributed to the loss of tensile strength. The hyphae within the fibres were moniliform and dark, anastomosing at irregular intervals. The fruiting structures, within which minute hyaline 1- or 2-celled spores were produced, erupted through the cortical and cuticular cells of the fibres.

996. **Leather fungicides.**—*Leath. Mfr.*, **75**, 7, p. 10, 1958. [Abs. in *J. Amer. Leath. Chem. Ass.*, **54**, 3, p. 177, 1959.]

Studies by the [U.S.] National Bureau of Standards on hundreds of fungicides were concerned with the factors essential for efficiency, deterioration of certain products and its effects on leather, and the manner in which substituents in certain organic compounds increase or decrease their fungitoxicity. Preliminary trials with bis(4-nitrophenyl) carbonate and bis(2-chloro-4-nitrophenyl) carbonate gave excellent results.

997. Inouye (Y.), Iizuka (Y.), & Tazima (T.). **Studies on leather fungi. I. Morphology and enzyme activity of the leather fungi. II. Selection of the test strains and the antifungal action of phenolic compounds. III. The antifungal activities of organic mercury compounds.**—*Bull. Jap. Ass. Leath. Tech.*, **3**, pp. 95–100, 167–177, 1957; **4**, pp. 163–168, 1958. [Japanese, with English summaries. Abs. in *J. Amer. Leath. Chem. Ass.*, **53**, 4, p. 225, 1958; **54**, 1, p. 55, 1959.]

Of 64 spp. isolated from skins and leather materials, 35 grew on a medium containing added keratose, viz., *Aspergillus niger*, *A. candidus*, and 14 other *A.* spp., 15 spp. of *Penicillium*, 1 of *Citromyces*, and 3 unidentified. Some strains exerted a very powerful enzymatic action (protease, lipase, and tannase).

Spores of 10 mould strains from leather were used to study the fungicidal properties of the chlorophenols and 4-nitrophenol in a liquid medium and found to be more resistant than *A. niger*. The efficiency of the chlorophenols increased with the number of Cl atoms, and for those with the same number the presence of a 4-Cl enhanced the activity. Comparable results were obtained with vegetable-tanned horse leather inoculated with these spores, but the quantities of fungicides required for inhibition of growth were about 10 times as great as in the liquid medium. Tests were also made with nitro-hydroxy-diphenyl, phenyl phenol, *sec*-amylphenol, and chloro-hydroxy-diphenyl, of which the last-named was as effective as $CCl_5OH$.

In Czapek-Dox liquid medium the inhibiting conc. for fungal contaminants of leather were computed for phenyl mercuric formate, acetate, propionate, butyrate, valerianate, and capronate, and for 4 alkoxy HgCl compounds (methoxy, ethoxy, propionoxy, and butyroxy). They averaged 1:200,000 as against 1:15,000 for Na pentachlorophenol. Vegetable-tanned leather strips were treated with saturated and 1:50,000 solutions of these compounds and placed in a weather-o-meter for 6 months. All the saturated solutions retained their efficacy for 6 months, but of the 1:50,000 treatments only phenyl mercuric propionate, propionoxy HgCl, and butyroxy HgCl were still active. It was concluded from further calculations that fungicidal efficiency increases with surface tension and decreases with rate of hydrolysis. In general, the alkoxy Hg compounds are superior to the phenyl mercuric.

998. Srivastava (O. P.). **Trichosporon cutaneum from the foot-skin of Man and the effect of antifungal drugs on it.**—*J. Indian bot. Soc.*, **36**, 3, pp. 268–271, 1957.

This report from the Central Drug Research Institute, Lucknow, of *T. cutaneum* causing interdigital pruritus, is a new record for India. The fungus was inhibited by undecylenic acid (125 mg. %) *in vitro*.

999. Staib (F.). **Ein Beitrag zur Morphologie von Trichosporon cutaneum bei Verwendung von Kaliumtellurit.** [A contribution to the morphology of *T. cutaneum* by the use of potassium tellurite.]—*Zbl. Bakt.*, Abt. 2, **112**, 1–5, pp. 38–42, 5 fig., 1959.

At the Institut für Hygiene und Mikrobiologie, University of Würzburg, Germany, *T. cutaneum* developed in the yeast form of white to yellow, dry colonies with a cerebriform surface and only a short peripheral mycelium on its opt. medium of beer wort agar. On the other hand, hyphal growth predominates on ordinary agar. The addition to the latter of 40 ml. 1% K tellurite solution/1,000 ml. resulted in a black pigmentation, beginning after 48 hr. and becoming daily more intense. Added to beer wort agar the K tellurite solution imparted a silver grey tinge to the luxuriant, cerebriform colonies. The distribution of the tellurite deposits was partly regular and partly irregular.

The compound appears to be particularly well adapted to the morphological study of *T. cutaneum*, on account of the resistance or reducing capacity of the fungus and because the reduction product is not a complex dye but pure tellurite.

1000. Iwata (K.) & Wada (T.). **Mycological studies on the strains isolated from a case of chromoblastomycosis with a metastasis in central nervous system.**—*Jap. J. Microbiol.*, **1**, 4, pp. 355–360, 4 fig., 1957.

At the Faculty of Medicine, University of Tokyo, 2 isolates from skin and brain lesions in a fatal case (9-yr.-old girl) were identical in their morphological characters and pathogenicity to mice and guinea-pigs. Both were referred to *Hormodendrum* [*Phialophora*] *pedrosoi*.

1001. Manson (M. D. E.). **Chromoblastomycotic brain abscess in a South African Bantu. Report of a case.**—*S. Afr. J. Lab. clin. Med.*, **4**, 4, pp. 283–288, 5 fig., 1958. [13 ref.]

Histological observations in this case of a 44-yr.-old labourer reported from the Waterval Municipal Hospital, Johannesburg, revealed hyphae 2–315 $\mu$ in length and irregular bulbous, spore-like structures, 4–6 $\mu$ diam., which are tentatively referred to *Cladosporium trichoides* [cf. **2**, No. 2154], but cultures were unobtainable. This is stated to be only the 5th case on record of lesions in the central nervous system caused by a dematiaceous fungus.

1002. **Les mycétomes.** [Mycetomas.]

a. Vanbreuseghem (R.). **Épidémiologie et thérapeutique des pieds de Madura au Congo belge.** [Epidemiology and therapy of Madura foot in the Belgian Congo.]—*Bull. Soc. Path. exot.*, **51**, 5, pp. 793–814, 2 maps, 1958. [37 ref.]

b. **Contribution à l'étude des mycétomes en Afrique française.** [A contribution to the study of mycetomas in French Africa.]. Destombes (P.). **Introduction.** André (M.). **Aspects cliniques et chirugie des mycétomes.** [Clinical aspects and the surgery of mycetomas.]—*Ibid.*, **51**, 5, pp. 815–817, 817–832, 3 pl. (6 fig.), 2 maps, 1958.

c. Segretain (G.) & Mariat (F.). **Contribution à l'étude de la mycologie et de la bactériologie des mycétomes du Tchad et de la Côte des Somalis.** [A contribution to the study of the mycology and bacteriology of the mycetomas of Chad and the Somaliland coast.]—*Ibid.*, **51**, 5, pp. 833–862, 4 pl. (16 fig.), 1 fig., 1958. [29 ref.]

d. Destombes (P.), Camain (R.), & Mazimoff (O.). **Anatomie pathologique des mycétomes et du pied de Madura en particulier.** [The pathological anatomy of the mycetomas and of Madura foot in particular.]—*Ibid.*, **51**, 5, pp. 864–876, 4 pl. (8 fig.), 17 fig. in text, 1958.

In the 1st paper of this symposium held in Paris, 19 Nov. 1958, during the Fiftieth

Anniversary meeting of the Société de Pathologie Exotique, an account is given, with numerous ref. to the literature, of 11 cases of Madura foot caused by *Allescheria boydii*, *Nocardia* [*Streptomyces*] *madurae*, *N. brasiliensis*, and *Madurella grisea* in the Belgian Congo, the main points covered being climatic factors and the incidence of mycetomas, traumatism, symptomatology, incidence in relation to sex, experimental inoculation of laboratory animals, treatment, and diagnosis.

The 2nd paper deals with 25 cases (details of which are tabulated) from Chad, French Equatorial Africa, caused by *Madurella mycetomi*, *M.* sp., *S. madurae*, *S. pelletieri*, *S. somaliensis*, and 2 cases the causes of which remained unidentified. The development of the disease is considered in 3 stages, viz. adaptation, proliferation, and invasion, the clinical forms of the disease are discussed, and the paper concludes with a section on surgical treatment.

In the 3rd paper the authors describe a laboratory study of 34 fresh mycetomas from Fort-Lamy, Chad, and Djibouti, Somaliland, the work covering the information supplied by the surgeons, dissection of the material received, cultures, histological examination of the 'grains', the destructive effects exerted by the parasite within the mycetoma, and the characters of the fungi or actinomycetes obtained in culture. The organisms isolated were *M. mycetomi*, *M.* sp., *S. madurae*, *S. pelletieri*, and *S. somaliensis*. It was concluded that the identification of a pathogen from its cultural characters can be made with exactitude only by an expert. The macroscopic appearance of the 'grain' extracted from a lesion may give valuable information as to the nature of the parasite, very small, red grains indicating *S. pelletieri*, very hard, yellow or brown-ochre grains indicating *S. somaliensis*, and white grains, which treated with hot potash appear microscopically surrounded with long fringes, indicating *S. madurae*. Histopathological examination of sections stained with hemateineosine-saffron is essential for distinguishing between the different organisms. Note must be made of the size and shape of the grain, its staining affinities, and the structure of the centre and periphery. In most cases, histopathological examination alone suffices to determine the species responsible for a mycetoma.

In the final paper, a histological study of material from over 160 mycetomas caused by *M. mycetomi*, *M.* sp., *S. somaliensis*, *S. pelletieri*, and *S. madurae* received from Dakar, Chad, Djibouti, and other localities in the French African possessions is presented. It is concluded that the causal organisms of mycetomas affecting the foot are osteophilic. The primary histological lesion of a mycetoma is a non-specific granuloma the suppurating centre of which contains a grain with specific histological characters. The defensive reactions of the human organism have virtually no effect upon the agent of a mycetoma. Invasion of the satellite lymphatic ganglia is seldom spontaneous, but is more frequent after too economical operations. Osseous lesions have definite macroscopic characters; a preliminary diagnosis of the species of the causal organism can be obtained from the X-ray photograph. The distinctness and intensity of the primary processes of osteitis in cases of mycetoma are such that the causal agents should serve as examples in general pathology.

1003. Josefiak (E. J.) & Kokiko (G. V.). **Mycetoma of the hand. Report of a case.**—*Arch. Path.*, **67**, 1, pp. 55–57, 2 fig., 1959.

Examination at the Bowman Gray School of Medicine, Whiston-Salem, N. Carolina, of yellow-white granules occurring in sections of an irregular, lobulated nodule of firm, grey-brown tissue on the dorsum of the left hand of a 69-yr.-old woman showed them to consist of masses of branched hyphae, radiating towards the periphery of the granule and terminating as large chlamydospores. A dense exudate of granulocytes surrounded the granules and was in turn encircled by a granulomatous process containing numerous foreign-body type giant cells and

macrophages. The patient's occupations of gardening and chicken-raising suggested that *Allescheria boydii* might be the pathogen concerned [cf. **1**, No. 2487].

1004. Sidransky (H.) & Friedman (Lorraine). **The effect of cortisone and antibiotic agents on experimental pulmonary aspergillosis.**—*Amer. J. Path.*, **35**, 1, pp. 169–179, 7 fig., 1959. [29 ref.]

In comparative experiments at the School of Medicine, New Orleans, Louisiana, the administration of cortisone and antibiotics (penicillin and achromycin), or of the former alone, enhanced the susceptibility of mice to subsequent infection by *A. flavus* [cf. **2**, No. 660]. Inhaled spores rapidly germinated into hyphae which permeated the lungs of the treated mice but not those of the untreated controls. Heat-killed spores induced no apparent lesions in either group. These results strengthen the hypothesis that a comparable increase in susceptibility to air-borne fungi may develop in some chronically ill patients treated with these agents, especially cortisone.

1005. Evans (J. H.) & Baker (R. D.). **Treatment of experimental aspergillosis with amphotericin B.**—*Antibiot. & Chemother.*, **9**, 4, pp. 209–213, 1959.

At the Duke University School of Medicine, Durham, N. Carolina, rabbits infected with *Aspergillus fumigatus* by i.v. injection showed widespread lesions and died within 5 days. Treatment with amphotericin B at the time of injection protected the animals, though the organism could be cultured from many organs at autopsy. Of 2 rabbits in which treatment was commenced 2 days after infection, 1 died after a further 1·5 days, the other showed only microscopic lung lesions at autopsy.

1006. Tanser (A. R.). **Pulmonary aspergillosis.**—*Proc. R. Soc. Med.*, Clin. Sect., **52**, 2, pp. 145–146, 2 fig., 1959.

A case is reported in a male aged 59. An X-ray of the condition is shown, and the mycetoma removed from the left apex by operation is illustrated. *Aspergillus fumigatus* was identified.

1007. Utz (J. P.), German (J. L.), Louria (D. B.), Emmons (C. W.), & Bartter (F. C.). **Pulmonary aspergillosis with cavitation. Iodide therapy associated with an unusual electrolyte disturbance.**—*New Engl. J. Med.*, **260**, 6, pp. 264–268, 2 fig., 2 graphs, 1959. [26 ref.]

The subjects of this report were a 47-yr.-old man and a 63-yr.-old woman, both infected by *A. niger*. Administration of KI at 30 g. daily for $2\frac{1}{2}$ weeks to one patient and 24 g. for $3\frac{1}{2}$ weeks to the other resulted in clearance of the fungus from the sputum and lung tissue and abscess drainage material. At the same time, however, the treatment caused mental disturbance in the woman and abnormalities in serum electrolytes in both cases.

1008. Staib (F.). **Aspergillus bei Appendizitis und Zökumphlegmone.** [*Aspergillus* in appendicitis and caecal phlegmon.]—*Dtsch. med. Wschr.*, **84**, 6, pp. 220–221, 235, 251–252, 1 pl. (5 fig.), 1959.

The species isolated at the Institut für Hygiene und Mikrobiologie, University of Würzburg, from the appendix and the exudate of the inflamed ileum and small pelvis in a 39-yr.-old female patient who died at the Regional Hospital, Bad Mergentheim, was a form of *A. nidulans* designated *A. unguis*. Mice inoculated intraperitoneally with the fungus succumbed after 8–10 days.

1009. Lindh (H. F.). **A method for evaluation of antifungal drugs against enteric Candida albicans in Mice.**—*Antibiot. & Chemother.*, **9**, 4, pp. 226–231, 1959.

The relative antifungal activity of nystatin, pimaricin, and trichomycin was studied

at the Research Division, American Cyanamid Company, Pearl River, New York, by inclusion of the drugs in the diet of mice given a suspension of *C. albicans* in liquid Sabouraud's medium in lieu of drinking water. The incidence of *C. albicans* in faecal pellets was determined by plating on Sabouraud's dextrose agar and a reduction of 90% or more of the av. colony count of the untreated mice was taken to indicate activity. Nystatin was active at 0·0125% of the diet, trichomycin at 0·25%, and pimaricin was inactive.

1010. Arcamone (F.), Bertazzoli (C.), Canevazzi (G.), Di Marco (A.), Ghione (M.), & Grein (A.). **La etruscomycina, nuovo antibiotico antifungino prodotto dallo Streptomyces lucensis n.sp.** [Etruscomycin, a new antifungal antibiotic from *S. lucensis* n.sp.]—*Giorn. Microbiol., Naples*, **4**, 2, pp. 119–128, 1 fig., 1957. [*B.H.*, **33**, p. 1135, 1958.]

This antibiotic, belonging to the polyene group and obtainable in crystalline form, is without antibacterial action but active against a range of fungi, particularly *Candida albicans*. Intestinal candidiasis in mice was rapidly cleared by oral dosage: oral toxicity was low ($LD_{50}$ = 1,263 mg./kg.).

1011. España (C.). **Valoración de agentes fungistáticos en la moniliasis experimental.** [Investigation of the fungistatic activity of drugs in experimental moniliasis.]—*Ciencia (Mex.)*, **18**, 1–3, pp. 21–23, 1958.

A description is given of 2 methods used by the author at the Squibb Institute for Medical Research. The 1st consists in the inoculation of embrionated eggs of 7 days (yolk sac) with 100 $LD_{50}$ of a standardized and stabilized suspension of cells of *C. albicans*. After ½ hr. the drug is injected. The average time of survival is registered as well as the percentage of deaths after 10 days. The 2nd consists in the inoculation of mice with 2 million cells of *C. albicans*, the survival time being 30–40 hr. in non-treated mice. The fungistatic effect of nystatin was studied.

1012. Sarot (I. A.), Littman (M. L.), & Cerruti (M. M.). **Intrathoracic injection of amphotericin B in the treatment of monilial empyema.**—*Sea View Hospital Bulletin*, **17**, 3, pp. 95–100, 1959. [Summary in Interlingua.]

*Candida albicans* infection of the thoracic cavity in a 26-yr.-old Puerto Rican woman, who had undergone left pneumonectomy and pleurectomy, was eliminated by 2 injections (3 mg. each) of amphotericin B into the thoracic space.

1013. Ohlwiler (D. A.) & Bricker (E. M.). **Candida albicans peritonitis successfully treated with amphotericin B.**—*New Engl. J. Med.*, **260**, 10, pp. 488–489, 1959.

The patient in this case reported from the Barnes Hospital, St. Louis, Missouri, was a 69-yr.-old farmer.

1014. Drouhet (E.), Hirth (L.), & Lebeurier (Geneviève). **Influence de l'amphotéricine B sur le métabolisme respiratoire de Candida albicans.** [The influence of amphotericin B on the respiratory metabolism of *C. albicans*.]—*C.R. Acad. Sci., Paris*, **247**, pp. 2416–2419, 2 graphs, 1958.

At 50 μg./ml. (a fungistatic conc.) amphotericin B in the presence of glucose induces an increase in the respiratory activity of *C. albicans*, and in the absence of glucose a 73% rise in endogenous oxidation. At fungicidal concs. an initial increase is followed by a marked inhibition of the O consumption.

1015. Childs (A. J.). **Further clinical trials of amphotericin: with report on the treatment of a probable generalized case of moniliasis.**—*Scot. med. J.*, **4**, 2, pp. 80–83, 1 diag., 1959.

At Ruchill Hospital, Glasgow, a series of adult male patients suffering from pneu-

monia were treated concurrently with tetracycline and amphotericin [**3**, No. 87]. A daily dose of 1,600 mg. of the latter prevented a rise in the incidence of *Candida albicans* in the throat and sputum above the level obtaining on the day of admission. In a comparable group treated with tetracycline alone there was a considerable increase of infection at these sites.

A probable case of generalized infection by *C. albicans* in a 64-yr.-old diabetic subject was successfully treated with amphotericin (1,200 mg. daily for 16 days) after the failure of attempts at therapy with penicillin and aureomycin.

1016. Huang (Nancy N.), Sarria (A.), & High (R. H.). **Therapeutic evaluation of nystatin and amphotericin in oral moniliasis in infants and children.**—*Antibiot. Ann., 1957–8*, pp. 59–64, 1958.

A total of 88 children with oral moniliasis were treated at St. Christopher's Hospital for Children and Dept of Pediatrics, Philadelphia, with nystatin and amphotericins A and B for approx. 8 days: prompt clinical response was observed in 45% of the patients treated with nystatin, in 32% with amphotericin B, and in 33% with amphotericin A. Frequent relapses among patients treated with all 3 agents was probably due to the persistence of *Candida albicans* in the mouth despite clinical response.

1017. Cox (R. S.) & Hannon (J. L.). **An evaluation of neomycin plus nystatin as a monilial suppressant in preoperative bowel preparation.**—*Antibiot. Ann., 1957–8*, pp. 658–666, 1958. [19 ref.]

At the Letterman Army Hospital, San Francisco, 62 patients with various colon diseases were given either neomycin (1 g.) + nystatin (250,000 units) every 4 hr. for 13 doses as a preoperative bowel preparation or neomycin alone: the treatments produced mild nausea in 50% of cases, and mild diarrhoea in about $\frac{2}{3}$: addition of nystatin did not increase these effects. In all cases, except those in which the treatment had to be stopped (5–10% in either regimen), an excellent suppression of the bacterial flora was obtained (as tested by swab cultures) while nystatin produced an additional suppression of monilial overgrowth which, on the whole, did not constitute a major complication. Superficial wound abscesses were due mainly to *Staphylococcus aureus* and except possibly for the extremes of age, the application of nystatin was not found advantageous.

1018. Dameno (R.). **El empleo de la tricomicina en el tratamiento del muguet.** [Trichomycin in the treatment of thrush.]—*Pren. méd. argent.*, **65**, 3384, pp. 562–563, 1958.

In 10 cases treated with a glycerin solution a cure resulted in 2–5 days [cf. **3**, No. 867, 868].

1019. Albohn (H.). **Klinische Erfahrungen mit dem Botrioxybenzosäureester als Antimykoticum.** [Clinical experiences with the botrioxybenzoic acid ester as an antimycotic.]—*Z. Haut- u. Geschlechtskr.*, **26**, 4, pp. 117–120, 1959.

A favourable report from the Universitäts-Hautklinik, Giessen, on the use of the above-mentioned boron-tannin complex, known commercially as 'dermaurynlit' (Wynlit Pharmazeutische Produkte G.m.b.H., Frankfurt/Main), especially in the therapy of interdigital and intertriginous mycoses caused by *Candida* [*albicans*] and erosive and vesicular epidermophytosis.

1020. Tsuchiya (T.), Fukazawa (Y.), & Kawakita (S.). **A method for the rapid identification of the genus Candida.**—*Mycopathologia*, **10**, 3, pp. 191–206, 1959.

At the Dept of Bacteriology, School of Medicine, Guntendo University, Tokyo, identification of *Candida* spp. in materials from a dental and an otolaryngological

clinic, by a slide agglutination method [cf. **3**, No. 874, 876] with monospecific or absorbed antisera, gave results in good accordance with those obtained by other means. For example, in one series of 85 isolates identified on the basis of both biological and serological characteristics the correlation of the biological identification to the final identification was 80%, that of the serological to the final 94·1%.

1021. Rosenthal (S. A.) & Furnari (D.). **Chlamydospore production by Candida albicans.**—*J. invest. Derm.*, **32**, 2(1), pp. 115–116, 1959.

At the New York University Post Graduate Medical School a corn meal infusion agar containing tween 80, or rice infusion agar with or without tween 80, were found best for the stimulation of chlamydospore production in *C. albicans*.

1022. Pagano (J.), Levin (J. D.), & Trejo (W.). **Diagnostic medium for differentiation of species of Candida.**—*Antibiot. Ann., 1957–8*, pp. 137–143, 1958.

The differentiating quality of the medium, tested at the Squibb Institute for Medical Research, New Brunswick, depends on the differing capacity of *Candida* spp. to reduce a given conc. of tetrazolium compounds (monotetrazolium more so than ditetrazolium) contained in the medium to insoluble, coloured formazans. The medium is supplemented with neomycin to prevent bacterial contamination.

1023. Negroni (P.) & De Negroni (C. B.). **Nuevos métodos para la determinación de Candida albicans.** [New methods for determining *C. albicans*.]—*Ann. Soc. cient. argent.*, **166**, 5–6, pp. 93–99, 3 fig., 1958. [English summary.]

It is stated from the Centro de Micología, Facultad de Ciencias Médicas, Buenos Aires, that of the isolates of *Candida* from natural cavities of man 75% are of *C. albicans*, methods for the identification of which are given.

1024. Mandel (M.), Hood (Florence), & Cohen (J. R.). **On the apparent stimulation of Candida albicans by chlortetracycline.**—*Antibiot. & Chemother.*, **8**, 4, pp. 187–191, 1958.

It is recorded from the Dept of Bacteriology, University of Massachusetts, Amherst, that no inhibition or stimulation of growth of 2 strains of *C. albicans* was obtained with chlortetracycline up to 100 μg./ml. Above this level there was progressive inhibition of growth. Attempts to isolate mutants with altered sensitivity to the drug failed. Thus no support is given to the view that an increased incidence of moniliasis following chlortetracycline therapy is due to a specific stimulation of the organism by the drug.

1025. Präve (P.). **Der Actinomycin-Einfluss auf den Stoffwechsel von Candida albicans.** [The influence of actinomycin on the metabolism of *C. albicans*.]—*Arch. Mikrobiol.*, **31**, 1, pp. 217–233, 14 fig., 1958.

At the Organisch-Chemisches Institut, University of Göttingen, cells of *C. albicans* exposed to long or short term action of actinomycin I showed increased respiration and inhibition of both glycolysis and growth. As this action runs parallel in cancer and yeast cells, it is thought that the latter might be useful as a test organism.

1026. Präve (P.). **Die Einwirkung des Actinomycins I auf den anaeroben Kohlenhydratstoffwechsel von Candida albicans.** [The action of actinomycin I on the anaerobic carbohydrate metabolism of *C. albicans*.]—*Naturwissenschaften*, **46**, 3, p. 115, 1959.

Experiments indicated that the inhibitory effect of actinomycin I on glycolysis in *C. albicans* operates in the adenyl acid system, where it presumably disturbs the balance of hexokinase activity and adenosintriphosphatose cleavage.

1027. Van Uden (N.) & Farinha (Manuela). **On the significance of temperature relations and vitamin deficiency patterns in the delimitation of yeast species. With a comparative study of Candida zeylanoides (Castellani) Langeron & Guerra and Candida norvegensis (Dietrichson) nov. comb.**—*Portug. Acta biol.*, **6**, Ser. B, 2, pp. 161–178, 4 fig., 1958. [22 ref.]

A study at the Instituto Botanico, University of Lisbon, showed 8 strains of *C. zeylanoides* (including the type strain) and 1 of *C.z.* var. *norvegensis* to fall into 2 specific groups: *C. zeylanoides* (6 str. dependent on biotin; max. growth temp. 30–35° C. and so unable to grow in a warm-blooded host) and *C. norvegensis* (3 str. dependent on biotin, pyridoxin, and thiamin; max. growth temp. 41–43°).

1028. Santa Maria (J.). **Variacion R-S en Candida guilliermondii (Cast.) Langeron y Guerra.** [Variation R-S in *C. guilliermondii*.]—*Microbiol. esp.*, **11**, 4, pp. 343–350, 9 fig., 1958. [English summary.]

The validity of the separation of var. *membranaefaciens* from *C. guilliermondii* is questioned on the grounds of the recent isolation of the sp. from a sector in a colony of the var. originating in a soft cheese at the Institute Nacional de Investigaciones Agronomicas, Madrid.

1029. Borrás (P. E.). **Moniliasis en ginecologia. El prurito vulvovaginal.** [Moniliasis in gynaecology. Vulvovaginal pruritus.]—*Obstet. Ginecol. latinoamer.*, **16**, 9–10, pp. 334–342, 1958. [English, French, and German summaries.]

A review.

1030. Pereira-Barreto (M.), Zago (H.), Oliveira (P. V.), Marques (W.), Mendonça (J.), Saquis (J.), Guimarães (J.), & Villa (E.). **Contribuição para o estudo da tricomonadiase vaginal. IV. Associação da T. vaginalis Donne 1837, bacilo filiforme de Döderlein e Candida spp.** [A contribution to the study of vaginal trichomoniasis. IV. Association of *T. vaginalis*, filiform bacillus of Döderlein and *C.* spp.]—*Rev. Asoc. med. brasil.*, **4**, 2, pp. 126–134, 1958. [English summary.]

*Candida* spp. were found in the vagina of 122 of 742 women (16·3%). *C.* was associated with *Trichomonas vaginalis* in 5·4% of the cases, with Döderlein bacillus in 10·5%, and with both in 2·6%. No differences were noted between white and non-white women and between pregnant and non-pregnant.

1031. Fowler (W.). **Candida albicans urethritis. Report of a case.**—*Brit. J. vener. Dis.*, **34**, 3, pp. 166–168, 1 fig., 1958. [*B.H.*, **34**, p. 130.]

White excrescences of the mucosa were seen on urethroscopic examination of a 54-yr.-old married man who complained of discharge, irritation, and slight frequency. Instillation of diamidophenylamine dihydrochloride (3 ml. daily 3 days) gave improvement, and the condition had cleared completely 3 months later, after the institution of diabetic treatment.

1032. Costa (A.). **Moniliase oral do recém-nascido.** [Oral moniliasis in the newborn.]—*Bol. Inst. Puer. Univ. Brasil.*, **15**, pp. 126–129, 1958.

The author recommends treatment with 1% gentian violet in mild cases and nystatin in the severe or generalized cases.

1033. Blank (W. H.). **Extensive pulmonary Candida albicans with recovery.**—*J. med. Ass. Ala.*, **28**, 4, pp. 117–118, 1958.

A 69-yr.-old woman at the Carraway Methodist Hospital, Birmingham, Alabama, suffering from bilateral pulmonary infection by *C. albicans* responded favourably to therapy with mycostatin as an aerosol.

1034. Conn (Nancy K.), Crean (G. P.), Maccabe (A. F.), & Maclean (N.). **Systemic candidiasis and endocarditis due to C. tropicalis.**—*Brit. med. J.*, **1**, 5127, pp. 944–947, 1 graph, 1959. [28 ref.]

A detailed case report from the Gastro-intestinal Unit, Western General Hospital, Edinburgh, on an infection by *Candida tropicalis* in a 61-yr.-old woman is followed by a review of 12 other cases of monilial endocarditis. The aetiology and pathogenesis of the condition are discussed.

1035. Lyon (D. G.) & Chick (A. O.). **Denture sore mouth and angular cheilitis. A preliminary investigation into their possible association with Candida infection.**—*Dental Pract.*, **7**, 8, pp. 212–217, 3 fig., 1957.

At the University of Bristol *Candida albicans* was cultured from 72% of 36 cases of denture sore mouth and from 17% of a series of 24 normal mouths. Treatment with 10% sodium caprylate jelly brought about cure or improvement in all but 1 case. Angular cheilitis was noticed in 33% of the cases [cf. **3**, No. 761].

1036. Mugnier (A.). **Contribution aux recherches mycologiques dans la 'pyorrhée'.** [Contribution to mycological researches on pyorrhoea.]—*Parodontologie*, **12**, 3, pp. 114–115, 1958. [German and English summaries.]

It is reported from the Hôpital Beaujou that in no instance did gingival puncture in 36 cases of pyorrhoea yield *Candida* which was, however, detected in the periodontal pockets of 7 cases (by culture 6 times (all *C. albicans*), by direct examination once).

1037. Nityananda (K.). **Monilial granuloma.**—*Brit. med. J.*, **1**, 5123, pp. 690–691, 3 fig., 1959.

This report from the Medical Research Institute, Colombo, Ceylon, on a 5-yr.-old girl is claimed as the 16th recorded case of monilial granuloma. Infection by *Candida albicans* started in the mouth, spread to the scalp, neck, shoulder, upper part of the trunk, and one finger nail. Biopses of the infected areas, in contrast to common types of moniliasis, showed much proliferation of the organism. All cases have occurred in patients of under 5 yr.

1038. Warin (R. P.). **Monilial granuloma.**—*Brit. med. J.*, **1**, 5129, p. 1121, 1 fig., 1959.

This is a brief case report from Bristol on a 5½-yr.-old girl who has had a *Candida albicans* infection of the mouth since the age of 2 weeks when her buttocks were also infected. Crusted horns which developed on the scalp at 3½ yr. yielded to treatment with nystatin ointment and the cough which started at about the same time improved with nystatin inhalations.

1039. Whitmore (C. W.). **Probable acrodermatitis enteropathica treated with nystatin (mycostatin).**—*Arch. Derm., Chicago*, **79**, 5, p. 594, 1959.

This case at Lynchburg, Virginia, of a 3-month-old Negro boy, with both skin scrapings and stools yielding *Candida albicans*, responded to nystatin (100,000 units orally, 4 times daily, and topical application in a zinc oxide emulsion). The skin lesions cleared remarkably in a week, and within 3 weeks the stools were negative and there was substantial regrowth of hair.

1040. Rothman (S.). **Some unusual forms of cutaneous moniliasis.**—*Arch. Derm., Chicago*, **79**, 5, pp. 598–600, 1959.

This paper, illustrated by slides, was presented at a meeting of the Cleveland Dermatological Society. In 2 cases cited of monilial granuloma (*Candida albicans*)

in children there were indications of pancreatic disease as the predisposing factor. Diodoquin was effective in a number of cases of acrodermatitis enteropathica associated with *C. albicans*.

1041. Whittle (C. H.), Moffatt (J. L.), & Davis (R. A.). **Paronychia or perionychia : aetiological aspects.**—*Brit. J. Dermat.*, **71**, 1, 11 pp., 7 fig., 1959.

At the Skin Dept, United Cambridge Hospitals, study of lesions in the early acute stage of paronychia showed that the characteristic pocket between nail and fold follows and does not precede invasion (predominantly *Candida albicans*). Of the 104 cases, 96 were female patients (50% 40–60-yr.-old); the infection most frequently started with the right middle finger. After 3 weeks of experimental occlusion and maceration of a healthy nail fold spontaneous active colonization of keratin took place, but it is suggested that although *C. albicans* is pathogenic and can invade the nail fold, its power to invade may depend on its change from yeast to mycelial phase.

1042. Shome (S. K.). **Studies in medical mycology. II. Candidiasis of the scalp.**—*Mycopathologia*, **10**, 3, pp. 187–190, 3 fig., 1959.

From the Dept of Botany, Lucknow, India, is reported the 1st case of moniliasis (*Candida albicans*) of the scalp in India. Symptoms were characteristic, viz. sharply demarcated, raised, oval to round lesions with a little whitish exudation, causing pain and hair loss.

1043. Batista (A. C.), Silveira (G.), & Oliveira (D.). **Fungos Candida e Torulopsis na bile em colecistites.** [*Candida* and *Torulopsis* in the bile from cases of cholecystitis.]—*Rev. Asoc. med. brasil.*, **4**, 4, pp. 360–361, 1958. [English summary.]

Yeasts were cultivated from the bile of 21 of 33 patients.

1044. Blyth (W.). **Host/parasite relationships in experimental moniliasis. I. Candida albicans.**—*Mycopathologia*, **10**, 4, pp. 269–282, 8 fig., 1959.

At the Experimental Mycoses Unit, Dept of Botany, University of Edinburgh, the survival time of mice inoculated intraperitoneally with *C. albicans* was related to the degree of renal involvement. Those dying within 12 days showed what is described as the acute reaction, characterized macroscopically by the presence of variable numbers of protruding abscesses in the cortices of one or both kidneys: the heart sometimes exhibited punctiform ventricular abscesses. In animals surviving more than 12 days the chronic reaction was seen, the renal cortex being devoid of abscesses, while the renal pelvis was usually dilated, and often yellow as a result of fungal colonization. Microscopic findings are described in detail. The acute disease is presumably the outcome of haematogenous dissemination of the fungus, followed by a relatively rapid establishment of the pseudomycelial phase, principally in the kidney and the heart. The chronic disease appears to follow haematogenous dissemination without a subsequent intramatrical mycelial development in the renal cortex; blastospores are eliminated to the cavity of the renal pelvis, where a pseudomycelium develops. The results are discussed.

1045. Visco (G.). **Ricerche sulla candidosi sperimentale dell'embrione di Pollo. Nota I. Le caratteristiche generali del processo.** [Researches on experimental candidiasis of the Chicken embryo. Note I. The general characteristics of the process.]—*Riv. Ist. sieroter. ital.*, **34**, 1, pp. 29–46, 8 graphs, 1959. [English summary.]

In studies at the University of Rome of the microbiological aspects of infection experimentally induced in the embryo of the chicken through the allantoid

membrane with 21 fungal strains (including 16 of *Candida*) it was ascertained that localized infection by *Candida* spp. is produced in the allantoid cavity, infection tending to spread somewhat to the embryo and causing a low, irregular rate of mortality among the infected eggs. The embryos were, however, highly susceptible to infections with *Candida* through the yolk sac, dying rapidly when inoculated with *C. albicans* or *C. tropicalis*. Susceptibility was, however, restricted to the 1st half of the period of pre-natal growth; after the 12th day, a progressively increasing resistance developed, which appeared to persist after the birth of the chick and to result, presumably, in non-apparent infection.

Yolk-sac inoculations with different species of *C.* gave results agreeing perfectly with those obtained in pathogenicity tests on rabbits and it is suggested that inoculations of chicken embryos should be included among the routine tests used for the identification of *C.* spp.

1046. Vanbreuseghem (R.). **Les infections mycotiques consecutives à l'antibiothérapie.** [Mycotic infections following treatment with antibiotics.]—*ex* Huit colloques de biologie clinique (Rapports présentés au 3me Congrès international de biologie clinique, Bruxelles, 1957, pub. by Presses Academiques Européennes, Bruxelles), pp. 189–210, 1958. [89 ref.]

After an introductory note on the increase in mycotic infections following treatment with antibiotics that has taken place in the last 5 yr. [cf. **2**, No. 1985], the author points out that a definite connexion has not yet been established between antibiotic treatment and subsequent mycoses other than moniliasis. Post-antibiotic moniliasis is discussed under the following headings: yeasts of the genus *Candida* considered as saprophytes; modifications in the *Candida* flora induced by antibiotic treatment; reasons for the increase in the growth of *Candida* spp. after antibiotic treatment; symptoms accompanying the administration of antibiotics; true post-antibiotic moniliasis; how saprophytes become parasitic; post-antibiotic lack of vitamin B; and prophylaxis and treatment.

1047. Mackinnon (J. E.). **A yeast in the stomach of the Mouse.**—*Mycopathologia*, **10**, 3, pp. 207–208, 1959.

At the Instituto de Higiene, Facultad de Medicina, Montevideo, Uruguay, *Torulopsis pintolopesii* was isolated from the stomach of all of 34 mice examined [cf. **3**, No. 177], being apparently a constituent of the normal flora. The sp. is acidophilic and seemed to be transient in the intestine.

1048. Haug (W. A.) & Merrifield (R. C.). **Coccidioidal villous synovitis. Report of a case and consideration of the literature.**—*Amer. J. clin. Path.*, **31**, 2, pp. 165–171, 7 fig., 1959. [Spanish summary.]

*Coccidioides immitis* was isolated on Sabouraud's medium and on Littman's ox gall agar from a granulomatous lesion on the left knee [cf. **2**, No. 1528] of a 35-yr.-old Indian farmer at the Veterans Administration Hospital, Portland, Oregon. The patient had been working 2 yr. previously in the San Joaquin Valley, where he contracted the local fever and the knee and foot began to swell. The reaction to coccidioidin skin tests was 2+. Only 4 records of analogous cases could be traced.

1049. Hunter (R. C.) & Mongan (E. S.). **Disseminated coccidioidomycosis treated with amphotericin B.**—*U.S. Forces med. J.*, **9**, 10, pp. 1474–1486, 4 fig., 1958. [*T.D.B.*, **56**, p. 359].

Three negro patients at the William Beaumont Army Hospital, El Paso, Texas, improved under therapy with amphotericin B, administered intravenously for periods of 3–12 months, but unfavourable reactions necessitated limitation of the

dose to 50 mg. daily. In 2 cases direct infection of 7 abscesses produced by *C. immitis* with 20–25 mg. of the drug dissolved in 2·5 mg. water gave uniformly beneficial results.

1050. Halde (C.), McNall (E. G.), Newcomer (V. D.), & Sternberg (T. H.). **Properdin levels in Mice and Man with coccidioidomycosis during soluble amphotericin B administration.**—*Antibiot. Ann., 1957–8*, pp. 598–601, 1 graph, 1958.

It is reported from the Division of Dermatology, University of California Medical Center, Los Angeles, that the level of properdin (a nonspecific antibody believed to be in part responsible for natural immunity) in the serum of mice was markedly lowered 4 days after inoculation with *Coccidiodes immitis*. Treatment with amphotericin B (10, 5, or 1 mg./kg. daily) lowered the death rate and raised the properdin level to almost normal. Administration of amphotericin B to healthy mice hardly altered their properdin level: the latter generally fell in human patients with disseminated coccidioidomycosis to within the low normal or subnormal range.

1051 a. Nevill (L. M. B.) & Cooke (E. R. N.). **Human cryptococcosis in Kenya.**—*E. Afr. med. J.*, **36**, 4, pp. 209–219, 3 fig., 1959.

A report, supplemented by information on the history, pathology, bacteriology, and epidemiology of cryptococcosis (*Cryptococcus neoformans*), on 7 cases (6 of meningitis and 1 of epilepsy), accompanied by obvious lung lesions in 2 [cf. **3**, No. 408].

b. Turner (P. P.). **A case of cryptococcosis with choroidal torulomata.**—*E. Afr. med. J.*, **36**, 4, pp. 220–223, 2 fig., 1959.

The particular interest of this fatal case in a young Embu male at the Provincial General Hospital, Nyeri, Kenya, lies in the clinical and radiological improvement resulting from a 9-month course of I.N.A.H. and P.A.S. for pulmonary infection; the ophthalmoscopic observation of choridal torulomata in both fundi when meningeal involvement supervened; and the exceptionally high sugar content (62 mg. %) of the cerebrospinal fluid.

1052. Rieth (H.) & Schönfeld (J.). **Zur Diagnostik und Therapie der Mykosen durch imperfekte Hefen (Cryptococcaceen).** [On the diagnosis and therapy of the mycoses caused by imperfect yeasts (Cryptococcaceae).]—*Arch. klin. exp. Derm.*, **208**, 4, pp. 343–361, 8 fig., 1959. [80 ref.]

Various systems of classification which have proved of value in routine diagnosis are reviewed and the morphological characters essential for accurate determination presented in 6 tables to facilitate rapid identification. Attention is drawn to the advantages of rice agar as a medium for the study of cultures *in situ* [**2**, No. 567] and to Tsuchiya's serological method as a valuable diagnostic adjunct [**3**, No. 874].

Therapeutic advances are represented by the treatment of cryptococcosis with amphotericin B and in the fullest possible topical application of mycostatin (moronal) to eliminate local foci of infection by *Candida* and *Trichosporon* spp. and the Torulopsidaceae. In cases of mixed infection by dermatophytes and yeasts the amenability to a given antimycotic of the individual components must be considered. One of the few which is equally destructive to both is 5-chloro-8-oxyquinoline, e.g., in the form of dermofongin A.

1053. Seeliger (H. P. R.). **Das kulturellbiochemische und serologische Verhalten der Cryptococcus-Gruppe.** [The cultural-biochemical and serological behaviour

of the Cryptococcus group.]—*Ergebn. Immunforsch.*, **32**, pp. 23–72, 8 fig., 1959. [204 ref.]

This is a very useful review of the genus [cf. **2**, No. 1790], comprising sections on history and nomenclature, cytology, cultural characteristics, biochemical characteristics, and serology. The author concludes, *inter alia*, that a combination of cultural-biochemical, morphological, and serological tests permits differentiation of *Cryptococcus* strains from other 'yeasts' in 24–96 hr. The differential diagnosis of *C. neoformans* from other *C.* spp. requires confirmation by animal inoculation with the original isolate.

1054. Niño (F. L.). **Blastomicosis por Cryptococcus neoformans (Torula histolytica) en la Republica Argentina.** [Blastomycosis caused by *C. neoformans* in Argentina].—*Pren. méd. argent.*, **45**, 37, pp. 3039–3043, 1958.

Three new cases are reported. All the patients had meningeal symptoms and 2 pulmonary lesions. One patient improved after intrathecal injection of gentian violet and oral administration of sulphadiazine, another after lobectomy, and the 3rd after the administration of sulphadiazine. So far 22 cases (16 fatal) have been recorded in Argentina. Three patients, 1 with thoracic localizations, 1 with pulmonary and meningeal, and 1 with osseous lesions, were cured and have had no recurrence of the infection after 21, 10, and 9 yr., respectively.

1055. Tiant (F. R.) & Fuentes (C. A.). **Cryptococcosis de localización cutánea.** [Cutaneous cryptococcosis.]—*Bol. Soc. cubana Derm. Sif.*, **15**, 2, pp. 65–72, 1958.

A case report from Cuba of a patient with chronic erythrodermia. The intravenous administration of amphotericin-B produced a rapid improvement of the lesions. *Cryptococcus neoformans* was isolated from skin lesions but not from cerebro-spinal fluid.

1056. Conti-Diaz (I. A.). **Criptococosis generalizada del Ratón por instilación nasal.** [Systemic cryptococcosis of the Mouse from nasal instillation.]—*Arch. Soc. Biol. Montevideo*, **23**, 1, pp. 63–67, 1958. [English summary.]

At the Instituto de Higiene, Montevideo, Uruguay, the author obtained systemic cryptococcosis by introducing heavy suspensions of cultures of *Cryptococcus neoformans* into the nasal cavity of the mouse. Pulmonary lesions were obtained in 9 of 20 mice, 6 of the 9 positive also had lesions in the brain.

1057. Littman (M. L.) & Schneierson (S. S.). **Cryptococcus neoformans in Pigeon excreta in New York City.**—*Amer. J. Hyg.*, **69**, 1, pp. 49–59, 1 fig., 2 maps, 1959. [18 ref.]

*C. neoformans* was isolated on liver-spleen glucose blood agar [**2**, No. 2092] by incubation at 37° C. from 72 of 201 samples [cf. **2**, No. 1803] from various indoor and outdoor locations in the 5 city boroughs. *Candida albicans* was detected in 12 specimens and *Nocardia asteroides* in 1. Samples collected from indoor pigeon coops were more heavily and frequently contaminated than those from outdoor sites. Of 37 coops in pet shops 24 (65%) were positive.

The 72 'pigeon' strains and 20 derived from human cases of cryptococcal meningitis were identical in a range of morphological and physiological characters and all caused the death of White Swiss mice within 3–73 days after intracerebral injection of single doses of 3,000,000 yeast cells.

1058. Ciferri (R.) & Montemartini (A.). **Taxonomy of Haplosporangium parvum.**—*Mycopathologia*, **10**, 4, pp. 303–316, 14 fig., 1959.

The isolation of *H. parvum* from the soil in Italy is recorded from the Centre of

Human and Comparative Mycology, University of Pavia. The strain in question was thermophilic (opt. approx. 35° C.) as were 2 of 6 American strains studied. The remainder grew best at about 20° C. All these strains and a Korean strain were feebly pathogenic. Following comparative taxonomic studies, *H. bisporale* is referred to the Phycomycetes and *H. parvum* to a new monotypic genus *Emmonsia* (as *E. parva*) of the Fungi Imperfecti [cf. **1**, No. 2433].

1059. Ruhe (D. S.) & Linton (B. A.). **The Mississippi Valley disease—histoplasmosis.**—Motion picture film, 16 mm., 1,100 feet, black and white, sound, 1957. [*Biol. Abstr.*, **33**, 6, No. 20198, 1959.]

'Available as a loan by paying the transportation charges from the University of Kansas, School of Medicine, Department of Audio-Visual Education, Kansas City 12, Kan. . . . The epidemiology and recognition of the disease are stressed.'

1060. Vanbreuseghem (R.). **Données récentes sur l'épidémiologie, le diagnostic, et la thérapeutique de l'histoplasmose.** [Recent data on the epidemiology, diagnosis, and treatment of histoplasmosis.]—*Ann. Soc. Sci. méd. nat. Brux.*, **11**, 2, pp. 282–304, 1958.

This review covers the history of histoplasmosis, geographical distribution, the causal organism (*Histoplasma capsulatum*), the interpretation of cutaneous tests with histoplasmin, the mode of infection, epidemic outbreaks, the saprophytic phase of *H. capsulatum*, the relation of the fungus to various soils, the frequency with which it is obtained from soils where chickens and pigeons are present, and the status of *H. duboisii*.

1061. Vanbreuseghem (R.). **Essais de mise au point sur l'histoplasmose africaine.** [An attempt at a general summing up on African histoplasmosis.]—*Bull. Acad. Med. belg.*, Ser. 6, **23**, 9, pp. 686–709, 1 map, 1958. [51 ref.]

The author gives notes on the 25 cases of African histoplasmosis (*Histoplasma duboisii*) recorded in the literature from 1922 to 1958, with a table showing the region from which each was reported, age, sex, and race of the patient, parts affected, measurements of the causal organism, whether giant cells were present, and results of culture and inoculation experiments. The characters of the disease are described. The disease is distinguished from that due to *H. capsulatum* by the identity of the causal organism, the anatomo-pathological lesions caused and their clinical aspect, and the geographical distribution. Most of the refs have already been noticed in this *Review* [cf. **3**, Nos. 901, 902].

1062. Felson (B.). **Some less familiar roentgen manifestations of intrathoracic histoplasmosis.**—*Arch. intern. Med.*, **163**, 1, pp. 54–62, 5 fig., 1959. [30 ref.]

The roentgenographic patterns in 5 cases at the Cincinnati General Hospital included the fibrocavitary form of infection, enlarging histoplasmoma, large, multinodular lesions, and certain sequelae of long-standing histoplasmic lymphadenitis, such as broncholithiasis, traction diverticulum of the oesophagus, the middle lobe syndrome, and superior vena caval obstruction. It is concluded that in the endemic area the possibility of histoplasmosis (*Histoplasma capsulatum*) should be seriously considered in all cases formerly diagnosed as pulmonary tuberculosis.

1063. Bernstein (I. L.) & Schwartz (J.). **Results of skin testing in military personnel.**—*Ann. intern. Med.*, **48**, 4, pp. 791–796, 1958.

It is reported from the Jewish Hospital, Cincinnati, Ohio, that testing with tuberculin, histoplasmin, blastomycin, and coccidioidin all personnel at Wartswill Air

Force Base, showed that 10% reacted to tuberculin and 18% to histoplasmin. X-rays revealed a number of patients with pulmonary calcification in the histoplasmin positive group.

1064. Knight (R. A.), Hill (G.), & Marcus (S.). **Immunization of Mice with polysaccharides of Histoplasma capsulatum.**—*Proc. Soc. exp. Biol., N.Y.*, **100**, 2, pp. 356–358, 1959.

At the University of Utah College of Medicine, Salt Lake City, *H. capsulatum* strain G17 (M) proved capable of stimulating active resistance to intravenously induced infection in mice [**3**, No. 684]. However, those immunized with a whole yeast cell antigen showed stronger resistance than polysaccharide-immunized and non-immunized controls when challenged by the intravenous injection of known numbers of viable yeast-phase organisms.

1065. Greendyke (R. M.) & Kaltreider (N. L.). **Chronic histoplasmosis. Report of a patient successfully treated with amphotericin B.**—*Amer. J. Med.*, **26**, 1, pp. 135–138, 4 fig., 1959.

A 53-yr.-old male patient at the Strong Memorial Hospital, Rochester, New York, made an apparently complete recovery from *Histoplasma capsulatum* infection of the parotid gland, larynx, tongue, and lungs and probably kidneys, spleen, and abdominal lymph nodes after a 2½ month period of amphotericin B therapy (total of 1,640 mg. in 68 doses).

1066. Miller (J. M.), Ginsberg (M.), Johnson (H. R.), & Bogosian (A.). **Treatment of histoplasmosis with amphotericin B (fungizone).**—*Antibiot. Med.*, **5**, 10, pp. 593–597, 1958. [*B.H.*, **34**, p. 441.]

A clinical report of a patient with severe histoplasmosis who did not respond to 2-hydroxystilbamidine but responded well to treatment with amphotericin B.

1067. Hurwitz (J. K.) & Pastor (B. H.). **Pericardial calcification associated with histoplasmosis.**—*New Engl. J. Med.*, **260**, 11, pp. 543–544, 2 fig., 1959.

A report from the Philadelphia Veterans Administration Hospital on a 50-yr.-old patient, bringing the total recorded number of cases involving the pericardium to 5 [cf. **2**, No. 1543].

1068. Methot (Y.), Blank (F.), & Masson (A. M.). **Gingivitis caused by Histoplasma capsulatum.**—*Canad. med. Ass. J.*, **79**, pp. 836–837, 1 fig., 1958.

In a 57-yr.-old man in Quebec, who later died, possibly of generalized histoplasmosis.

1069. Björkman (S.), Frisk (Å.), Nordenstam (H.), & Norhagen (Å.). **Generalized histoplasmosis. Clinical and patho-anatomic report of a fatal case.**—*Acta med. scand.*, **163**, 1, pp. 45–53, 2 col. pl., 6 fig., 1959.

The patient was a 61-yr.-old joiner resident in Stockholm. The illness was of 3 yr. duration and the diagnosis could only be established by the histological examination of autopsy specimens. The source of infection could not be ascertained. Hitherto only a laboratory epidemic involving 7 persons has been reported from Sweden [cf. **2**, No. 1539] and generalized infection is believed to be also unknown in the other Scandinavian countries.

1070. Estéves-Bejarano (E.) & Buchwald (C. von). **A propósito de un case de histoplasmosis generalizada.** [A case of disseminated histoplasmosis.]—*Rev. ecuator. Pediat.*, **10**, 3–4, pp. 141–145, 1958.

A case of a 17-month-old child in Guayaquil, Ecuador.